



Tobacco Use in Kentucky

2012



KENTUCKY
tobacco prevention
& cessation program

This report was prepared by
Tobacco Prevention and Cessation Program
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A Word from the Commissioner

Since the report *Tobacco Use in Kentucky, 2005*, Kentucky has made significant strides in reducing the devastating impact of tobacco use. Despite our progress, tobacco use continues to be the leading preventable cause of death, disease and excess health care costs both in the Commonwealth and the nation.

This report updates the 2005 edition with the newest data and figures on tobacco use and its impact in Kentucky. In addition to reporting on the progress made, the report gives suggestions on how Kentucky can move toward a healthier and more prosperous future.

Since the first Surgeon General's report on cigarettes was published in 1964, the evidence continues to overwhelmingly link disease and death with tobacco use. Health consequences of tobacco use include heart disease, stroke, lung cancer, chronic obstructive pulmonary disease (COPD), mouth, throat and bladder cancers, and many other cancers.

In good news, smoking prevalence has decreased from 24.8% to 32.6% between 2002 and 2010, a decline of almost 20%. Even with that significant progress, Kentucky still ranks 49th in the nation, second only to West Virginia. Tobacco use is not equally distributed among Kentucky's citizens. While the overall adult smoking prevalence is 24.8%, the prevalence was 40.4% for those with less than a high school education. Smoking prevalence for all races has decreased since 1996, but the rate of decline for African-Americans has been much slower than for white Kentuckians. Among Kentucky high school students, 36.7% use some form of tobacco. While youth smoking has declined, smokeless tobacco use has been increasing since 2006.

We still have a significant problem with smoking during pregnancy. Kentucky's prevalence of women smoking while pregnant is 24.3%, twice the national average. Smoking during pregnancy has been linked to myriad poor health outcomes, such as miscarriage, low birth weight, sudden infant death syndrome (SIDS), and cleft palate.

Smoking is estimated to cost Kentucky \$1.7 billion per year in attributable health care costs. A further \$2.13 billion is lost each year to smoking-attributable productivity losses. Each Kentucky household pays approximately \$595 per year in federal and state taxes to support the economic burden of tobacco.

Most Kentucky smokers want to quit and we are rising to meet that need. Since 2005, the Kentucky Tobacco Quitline provides free individual cessation counseling by phone. The Quitline provides confidential services to pregnant women, youth over the age of 15 and offers both English and Spanish language counselors. Unfortunately most Kentuckians are not currently aware of this resource. Our challenge is to make sure that every tobacco user has the information needed about cessation opportunities.

Smoke-free laws protect the public and protect workers from the deadly toxins in secondhand smoke. In 2004, Lexington-Fayette Urban County Government became the first community in the state to pass a smoke-free air policy. Today, over 30% of Kentuckians are protected by comprehensive smoke-free regulations. Communities are further protecting their youth by passing 100% Tobacco-Free School policies, a proven way to reduce youth exposure to tobacco.

In the past, tobacco was a significant crop for Kentucky's economy. As we move to the future, tobacco is waning and farmers are turning to different and more profitable crops. Kentuckians are also turning away from tobacco use for their own health and for the health of their friends, families and communities. Individuals have a choice to use tobacco, but we can create an environment to encourage safe, healthy choices.

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Executive Summary

Tobacco use affects the economic well-being of the state of Kentucky and the health of its citizens. Provided funding from the Master Settlement Agreement in 2000, the Kentucky Tobacco Prevention and Control Program has made substantial progress in reducing the prevalence of tobacco use and its consequences. Unfortunately there is still more to be done. Key findings from the *Tobacco Use in Kentucky 2011* report are featured below.

Tobacco Use in Kentucky

- 24.8% of adults in Kentucky are current cigarette smokers, compared to 17.3 nationwide (2010).
 - 26.3% of males smoke
 - 23.4% of females smoke
- Smoking has decreased almost 20% from 2002, when smoking prevalence was 32.6%
- Kentucky has the 2nd highest adult smoking rate in the nation.
- 24.3% of mothers reported smoking during pregnancy.
- From 2000 to 2010, adult smoking prevalence fell on average 0.57 percentage points a year, compared to 0.65 nationwide.
- 9% of middle school students are current smokers (2010).
- 26.6% of high school students are current smokers (2010).
- From 2004 to 2010, youth smoking prevalence has declined slightly among high schools students (from 28% to 26.6%) and middle school students (from 14.7% to 9%).

The Health Impact of Tobacco

- Annually, 7,848 deaths in Kentucky are attributed to smoking-related diseases.
 - 3,339 deaths due to cancer
 - 2,506 deaths due to cardiovascular disease
 - 2,003 deaths due to respiratory disease
- 20% of all deaths in Kentucky are attributed to smoking.
- Annually, 116,679 years of potential life are lost due to smoking-attributable premature death (adults 35+ and infants).
- 14.8 years of life were lost, on average, among Kentucky adults who died as a result of a smoking-attributable illness.

The Economic Impact of Tobacco

- \$1.77 billion in excess personal medical care expenditures were attributable to smoking.
- \$2.63 billion in productivity losses were attributable to smoking-related premature death.
- \$1.2 billion in productivity losses were attributable to smoking-related illnesses.
- \$5.6 billion was the estimated total annual economic impact of smoking in Kentucky.

Introduction

Tobacco use is a widespread addiction in Kentucky (Centers for Disease Control and Prevention, 2010). An extensive body of evidence has consistently linked tobacco use to a variety of adverse health outcomes, including but not limited to, an increased risk of morbidity and mortality (illness and death) from coronary heart disease, stroke, lung cancer, chronic obstructive pulmonary disease (COPD), and a variety of cancers. There is also strong evidence that smoking is related to infertility, low birth weight, stillbirth, preterm delivery, and Sudden Infant Death Syndrome (SIDS) (CDC, 2011).

The harmful effects of smoking do not end with the smoker. More than 88 million nonsmoking Americans, including 54% of children aged 3-11 years, are regularly exposed to secondhand or passive smoke (CDC, 2011). In 2009, the Institute of Medicine concluded that sufficient evidence exists to infer a causal relationship between secondhand smoke exposure and increased risks of coronary heart disease (CHD) illness and death among both men and women and that a decrease in secondhand smoke exposure decreases the risk of Acute Myocardial Infarction (AMI), or heart attack. Even brief exposure can be dangerous, as nonsmokers inhale many of the carcinogens and toxins in cigarette smoke. In 2010, a report from the U.S. Surgeon General further substantiated previous evidence that there is no risk free level of exposure to secondhand smoke. Breathing even a little secondhand smoke can be harmful to your health.

Despite peer-reviewed reports and a high level of public knowledge of the adverse effects of smoking, tobacco use remains the leading preventable cause of disease, disability, and death in the United States. Each year, an estimated 443,000 people die prematurely from smoking or exposure to secondhand smoke, with an additional 8.6 million living with a smoking-attributable illness (CDC, 2011). In 2010, 24.8% of Kentucky adults reported being current smokers compared to the U.S. national average of 17.3%. Among adults ages 35+, over 7,800 Kentuckians died as a result of tobacco use per year, on average, during 2000-2004. This represents a smoking-attributable mortality rate of 370.6 per 100,000, ranking the state last in the category. As a result of the aforementioned high rates, the total smoking-attributable expenditures in Kentucky for 2010 were in excess of \$5.6 billion, including productivity losses of \$1.2 billion, premature death losses of \$2.6 billion, and direct medical expenditures of \$1.7 billion (Rumburger, Hollenbeak, & Kline, 2010).

Dr. Thomas Frieden, director of the CDC, highlighted tobacco control in a group of six public health issues he identified as “winnable battles” (CDC, 2011b). Frieden has encouraged health officials

Figure 1. MPOWER Framework



to engage in winnable battles, stating that in the war for health, the winnable battles represent diseases and conditions with a large public health burden. The CDC's Office on Smoking and Health promotes MPOWER (Figure 1), a package of six proven policies identified by the World Health Organization (WHO) in 2009 that can help reduce the use and burden of tobacco-related morbidity and mortality.

Kentucky is working to address each of these evidence-based, proven policies. Data from monitoring tobacco use is essential to ensure the success of the five additional policy interventions in the MPOWER framework. Good monitoring systems must track several indicators, including (1) prevalence of tobacco use; and (2) impact of interventions. To maintain an effective monitoring system, collaboration is needed among health practitioners, economists, epidemiologists, data managers, governmental officials and many others. The second piece of the MPOWER package includes protecting people from tobacco smoke. Since smokers and non-smokers alike are vulnerable to the harmful health effects of second-hand smoke, the principle behind smoke-free legislation is that governments are obligated to protect the health of citizens.

Despite conclusive evidence on the dangers of tobacco, relatively few tobacco users comprehend the attributed health risks. MPOWER encourages governments, with input from non-governmental organizations, to launch media campaigns to publicize the full extent of tobacco's dangers. MPOWER also encourages the enforcement of bans on tobacco advertising, promotion and sponsorship. National-level studies pre and post advertising bans found a decline in tobacco consumption of up to 16%. Advertising bans reduce tobacco use among people of all income and educational levels (WHO, 2009).

The final MPOWER intervention encourages governments to raise tobacco taxes. Cigarette excise tax is the amount of tax levied on a pack of 20 cigarettes. Kentucky's cigarette excise tax is currently 60 cents, well below the national average of \$1.59 per pack.

Surveillance and Evaluation

The Kentucky Tobacco Prevention and Control Program established a surveillance and evaluation system to guide policies, monitor and document short, intermediate, and long-term population outcomes, ensure accountability, and evaluate the effectiveness of the program in meeting its goals.

Surveillance is the process used to measure tobacco use behaviors and changing trends in tobacco use among Kentuckians. It is also used to measure their knowledge and attitudes about tobacco use and tobacco control policies. These population-level measurements occur at defined intervals of time, typically on an annual basis. The surveillance data are used to monitor progress toward achieving long-term programmatic goals.

Statewide surveillance programs gathering information relevant to tobacco use prevalence, knowledge, attitudes and behavior include the Kentucky Adult Tobacco Survey (KYATS), the Kentucky Youth Tobacco Survey (KYTS), the Behavioral Risk Factor Surveillance System (BRFSS), the Pregnancy Risk Assessment Monitoring Systems (PRAMS), Kentucky's Tobacco Quitline, and Kentucky Vital Statistics. On the following pages, the surveillance data presented are the most recent available and are from the aforementioned sources.

Previous versions of the Tobacco Use in Kentucky report have been written and released; however, the findings are not directly comparable across the reports. This is due to the nature of the statistical software package used to calculate data necessary to create the report, or more specifically, the incorporation of updated estimates within the program.

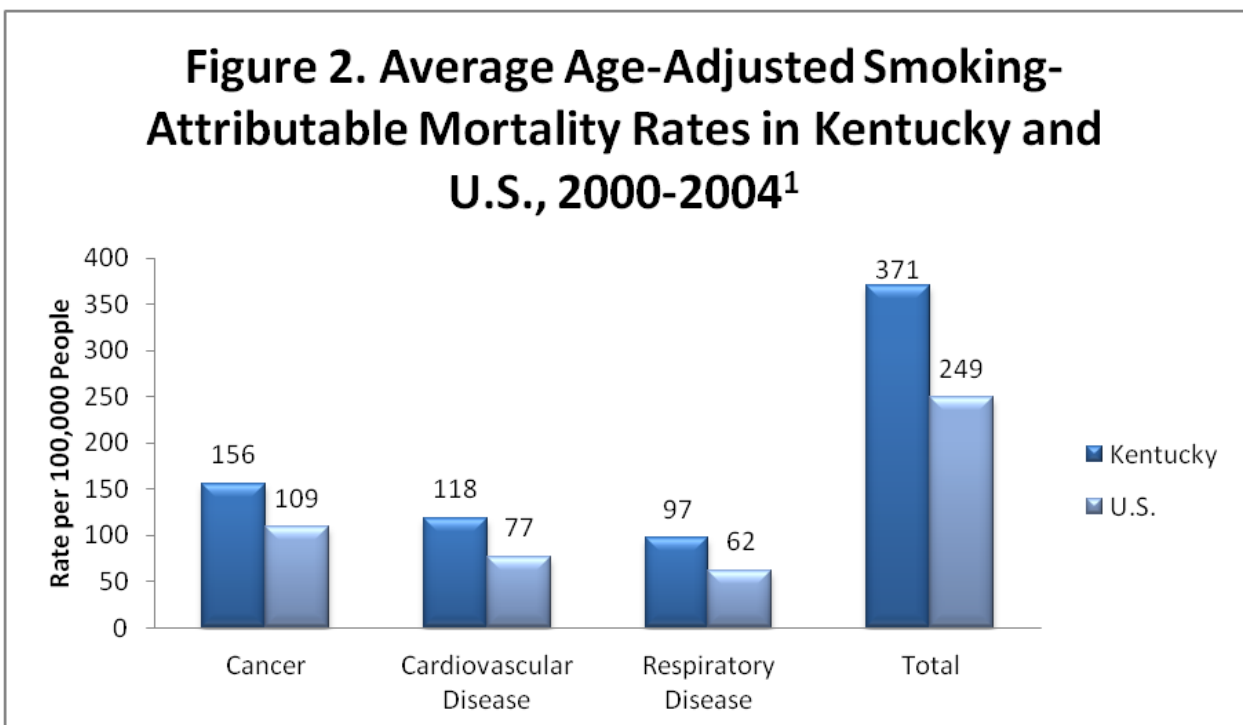
Smoking-Attributable Morbidity and Mortality

Twenty-nine Surgeon General's reports, and 50 years of extensive and conclusive biologic, epidemiologic, behavioral, and pharmacologic evidence, has consistently demonstrated that tobacco use and exposure causes damage to the human body, leading to disease and reduced quality of life (U.S. Surgeon General, 2010). Smokers have been found to incur an increased relative risk of morbidity and mortality from coronary heart disease, stroke, lung cancer, chronic obstructive pulmonary disease (COPD), and a wide variety of neoplastic diseases. There is also strong evidence that smoking is related to infertility, low birth weight, stillbirth, preterm delivery, and sudden infant death syndrome (SIDS) (CDC, 2011c).

The 2010 U.S. Surgeon General's report identified the public health costs of tobacco as completely avoidable, and the leading cause of preventable death in the U.S. each year. In the U.S., cigarettes are responsible for approximately 443,000 out of approximately 2,400,000 deaths annually, or nearly one in every five (U.S. Surgeon General, 2010). Furthermore, smoking is responsible for at least 30% of all cancer-associated deaths, and has also been identified as a significant risk factor for lung, larynx, mouth throat, bladder, and esophageal cancers, as well as cancers of the pancreas, cervix, kidney, and stomach (U.S. Surgeon General, 2010; CDC, 2011).

Current evidence also supports a causal relationship between exposure to cigarette smoke and respiratory disease. The American Lung Association identified smoking as responsible for approximately 80-90% of chronic obstructive pulmonary disease (COPD) deaths, including chronic bronchitis and emphysema. Among those who are current smokers, chronic lung disease accounts for 73% of smoking-attributable conditions (CDC, 2011).

With the U.S. population-level data highlighted above, the following pages will present data on Kentucky tobacco-related surveillance. The age-adjusted mortality rate for smokers in Kentucky is higher than that found in the U.S. general population. In Kentucky, an average of 371 per 100,000 people die from smoking-attributable diseases, compared to 249 per 100,000 among the entire United States (Figure 2).



Tobacco Use in Kentucky 2011

As illustrated in Figure 3, more males than females die of smoking-attributable disease in Kentucky. Cancer has the highest smoking-attributable mortality rate, averaging 244 per 100,000 males, and 92 per 100,000 females dying of smoking-related cancers annually.

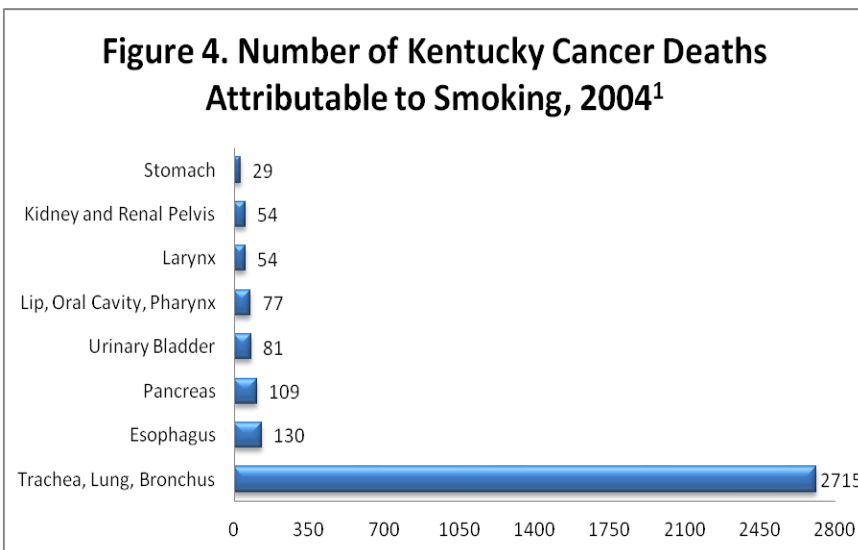
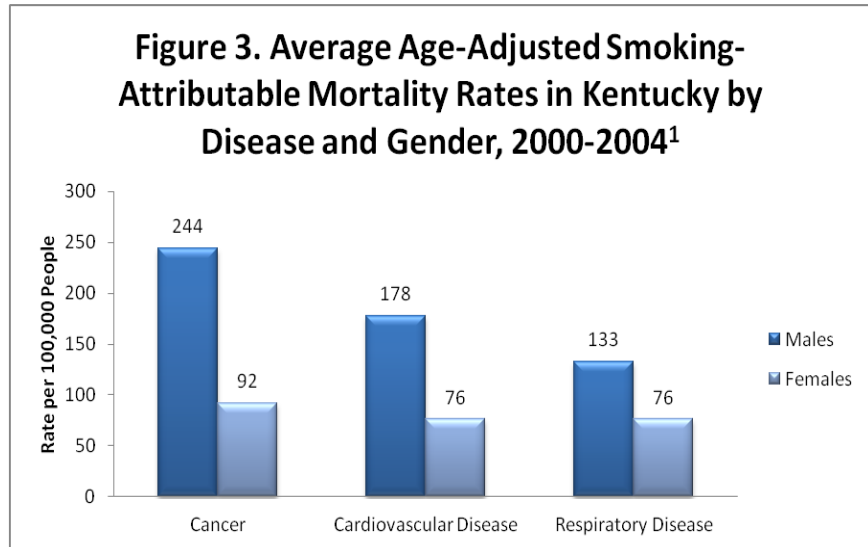


Figure 4 illustrates the smoking-attributable mortality for cancer, cardiovascular disease, and respiratory disease in Kentucky for 2004.

Figure 5 depicts the smoking-attributable cardiovascular disease mortality. In 2004, smoking-attributable ischemic heart disease was responsible for 1,306 deaths in Kentucky.

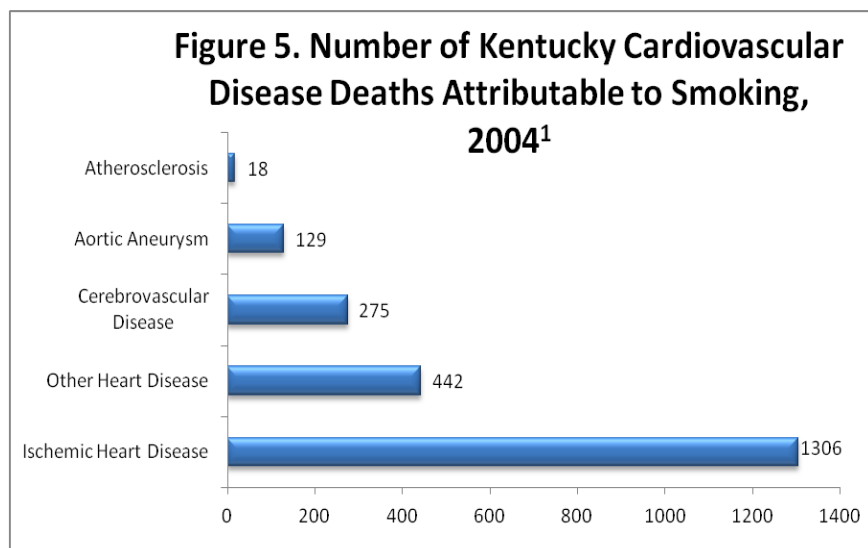
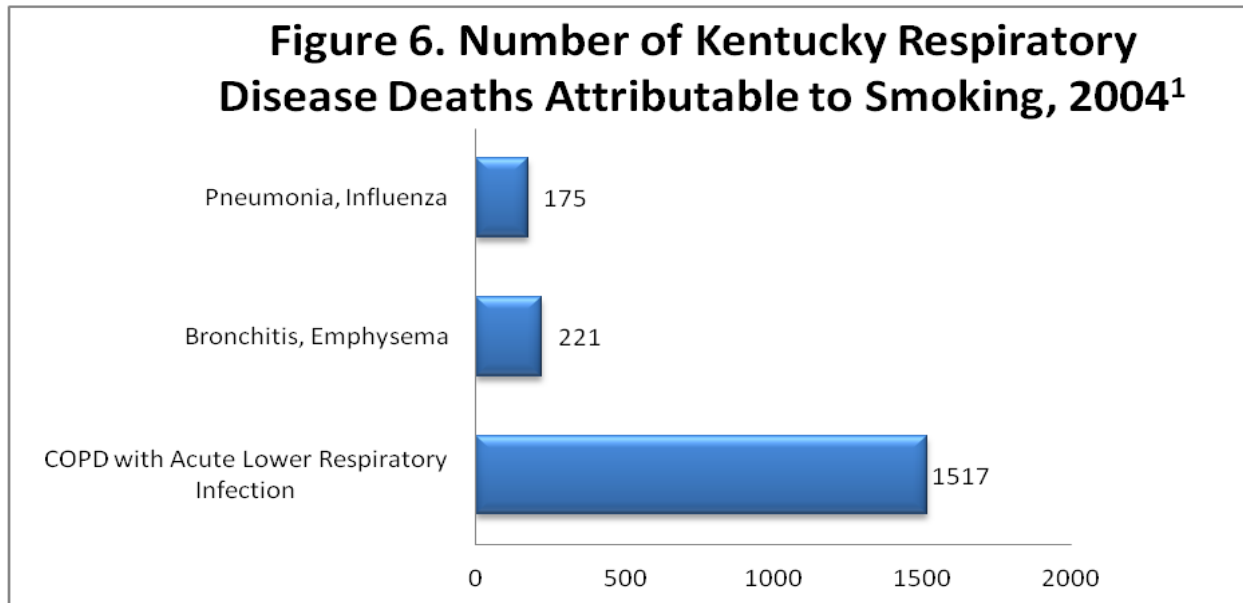


Figure 6 below illustrates smoking-attributable respiratory mortality. Chronic obstructive pulmonary disease (COPD), combined with acute lower respiratory infection, was accountable for approximately 1,517 deaths in Kentucky in 2004.



Smoking-Attributable Economic Costs

Health care costs in Kentucky attributed to smoking are estimated to be \$1.7 billion annually (Rumburger et al., 2010). Smoking costs the state Medicaid program approximately \$487 million, or \$154 per adult, annually. Smoking-attributable productivity losses cost Kentucky an estimated \$2.13 billion per year. Furthermore, Kentucky taxpayers' federal and state tax burden from smoking-attributable medical expenditures is approximately \$595 per household.

Table 1 shows total productivity losses attributable to smoking. This includes productivity losses resulting from premature death, workplace productivity losses due to absenteeism, and the total loss of productive work time. Figures are further broken down as productivity loss per pack of cigarettes and costs per smoker. Total productivity losses attributed to smoking were nearly \$3.9 billion, inflation adjusted to 2009. This approximates to \$4,297 per smoker, and \$6.92 per cigarette pack sold.

Table 1. Kentucky Annual Productivity Losses Attributed to Smoking¹

Component	Total	Per Pack	Per Smoker
Premature Death			
Men	\$1,726,897,921	\$5.96	\$3,701.17
Women	\$910,347,839	\$3.33	\$2,068.26
Combined	\$2,637,245,760	\$4.69	\$2,908.51
Workplace Productivity			
Current Smokers	\$856,430,748	\$1.52	\$944.52
Former Smokers	\$402,974,306	\$0.72	\$444.42
Combined	\$1,259,405,054	\$2.24	\$1,388.95
Total Productivity Losses	\$3,896,650,814	\$6.92	\$4,297.46

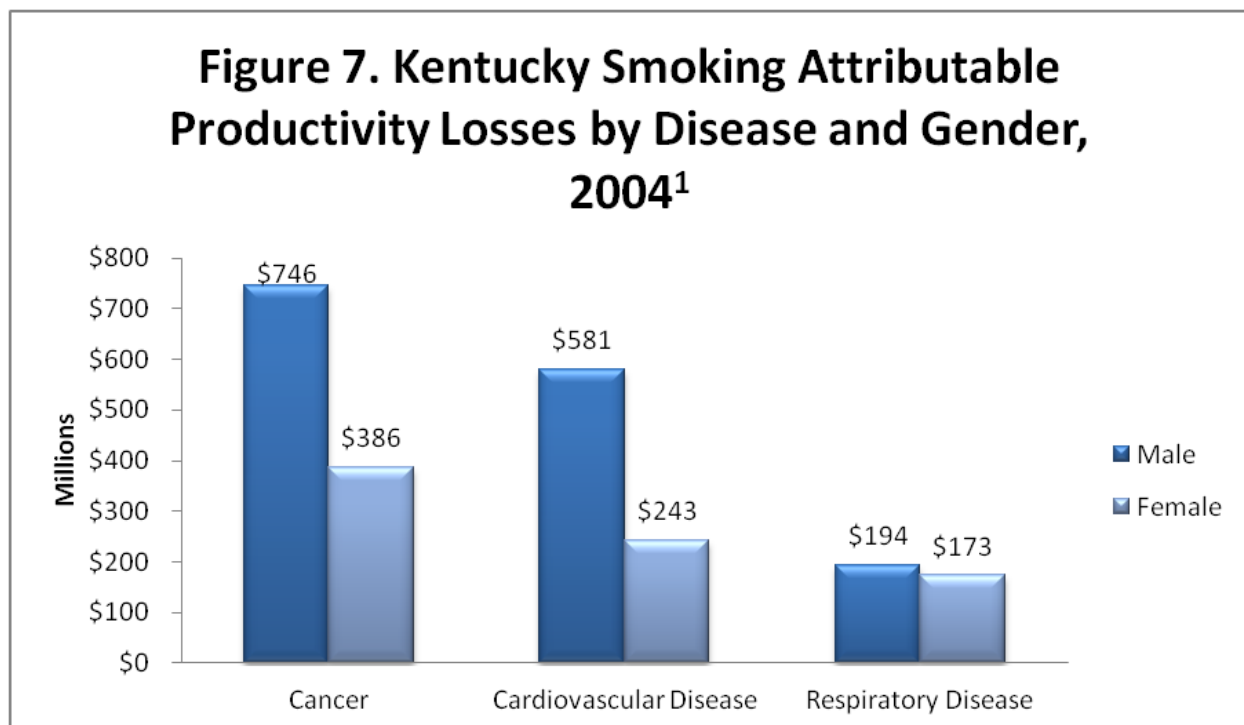
Tobacco Use in Kentucky 2011

Provided in Table 2 are the direct expenditures on medical care attributable to smoking and smoking-related events in Kentucky. Total expenditures per pack for both medical care and productivity losses are \$10.08 per pack. Total medical expenditures were approximately \$1.8 billion, or \$3.15 per pack, inflation adjusted to 2009.

Table 2. Kentucky Annual Direct Medical Expenditures Attributable to Smoking¹

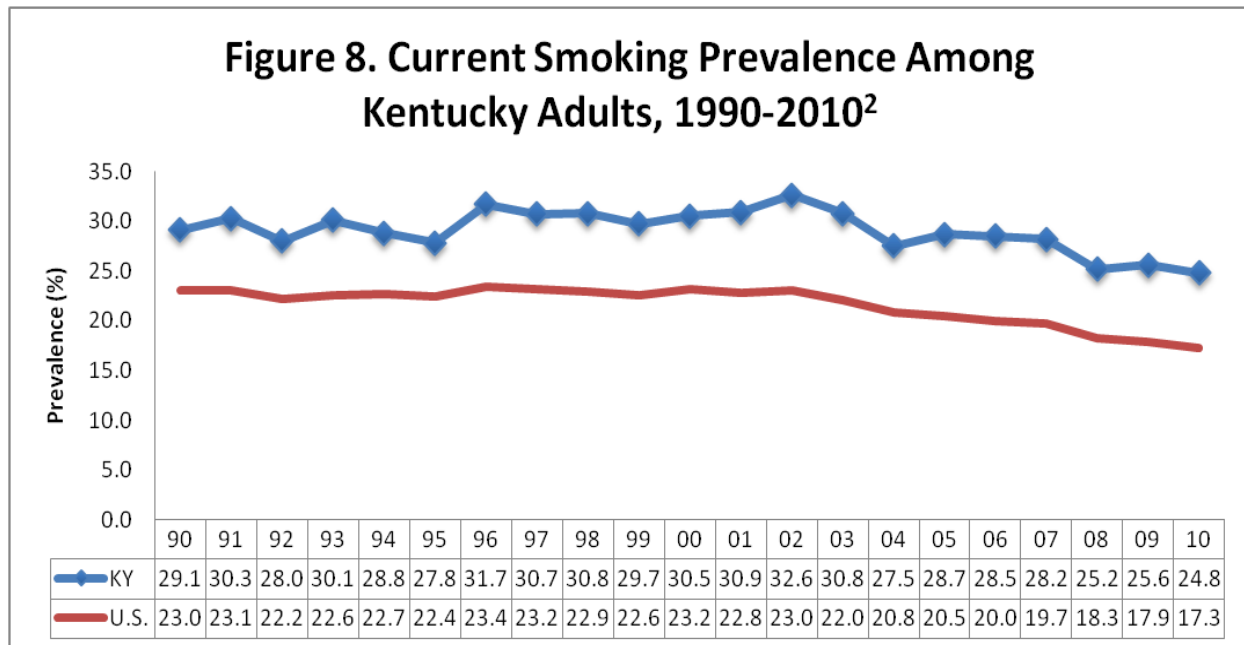
Cost Component	Total	Per Pack	Per Smoker
Adult Expenditures			
Ambulatory	\$270,111,896	\$0.48	\$297.90
Hospital Care	\$895,124,176	\$1.59	\$987.20
Rx	\$354,900,384	\$0.63	\$391.41
Nursing Home	\$135,661,580	\$0.24	\$149.62
Other Care	\$116,281,354	\$0.21	\$128.24
Total	\$1,772,079,391	\$3.15	\$1,954.35
Neonatal Expenditures	\$5,614,639	\$0.01	\$6.19
Total Expenditures	\$1,777,694,030	\$3.16	\$1,960.55

Figure 7 illustrates productivity losses due to smoking-attributable diseases. In each disease category, more productivity is lost among males when compared to females. All types of cancer cause the highest losses in productivity for both males and females.



Current Use Among Adults and Youth

Since 2002, overall smoking prevalence in Kentucky has declined steadily. Smoking prevalence declined nearly 20% between 2002 and 2010, from 32.6% to 24.8%, respectively (Figure 8). The decline was most dramatic in 2004, coinciding with the passage of the state's first smoke-free regulation in Lexington. The uptick in smoking prevalence seen in 1996 is an artifact of the change in the definition of "current smoker" adopted at that time by BRFSS survey administrators which included more occasional smokers. Prior to 1996, to be identified as a current smoker by the BRFSS survey, a respondent was required to meet the following criteria: (1) smoked at least 100 cigarettes in a lifetime; (2) currently smokes; and (3) smoked on one or more of the past 30 days. In contrast, the post 1996 BRFSS survey identifies current smoking using the following criteria: (1) smoked at least 100 cigarettes in a lifetime; and (2) currently smokes everyday or some days.

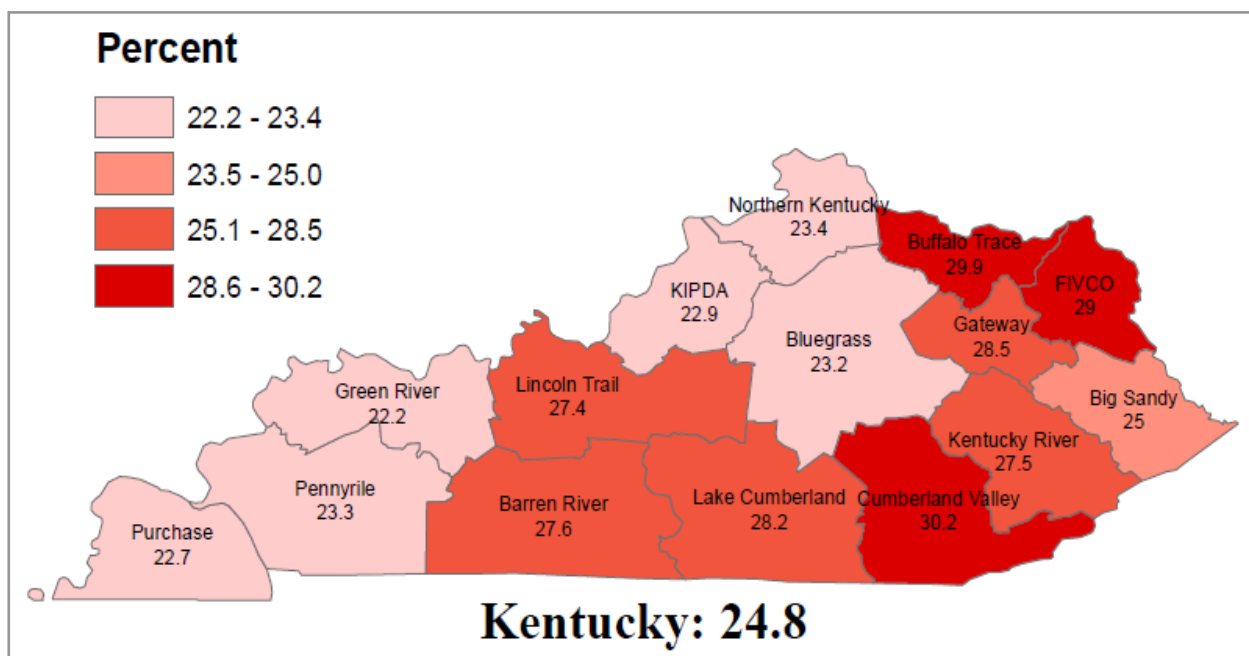


Among adults, Kentucky currently ranks 49th in the nation in smoking prevalence. In 2010, there were approximately 1.1 million current adult smokers in Kentucky. Table 3 highlights where Kentucky's smoking prevalence ranks in comparison to other states. In Map 1, smoking prevalence is broken down for the state of Kentucky by U.S. Census defined area development districts.

Table 3. Current Smoking Prevalence Rankings by state, 2010²

Rank	Lowest	Smoking Prevalence	Rank	Highest	Smoking Prevalence
1	Utah	9.1	46	Arkansas	22.9
2	California	12.1	47	Mississippi	22.9
3	Connecticut	13.2	48	Oklahoma	23.7
4	Arizona	13.5	49	Kentucky	24.8
5	Massachusetts	14.1	50	West Virginia	26.8

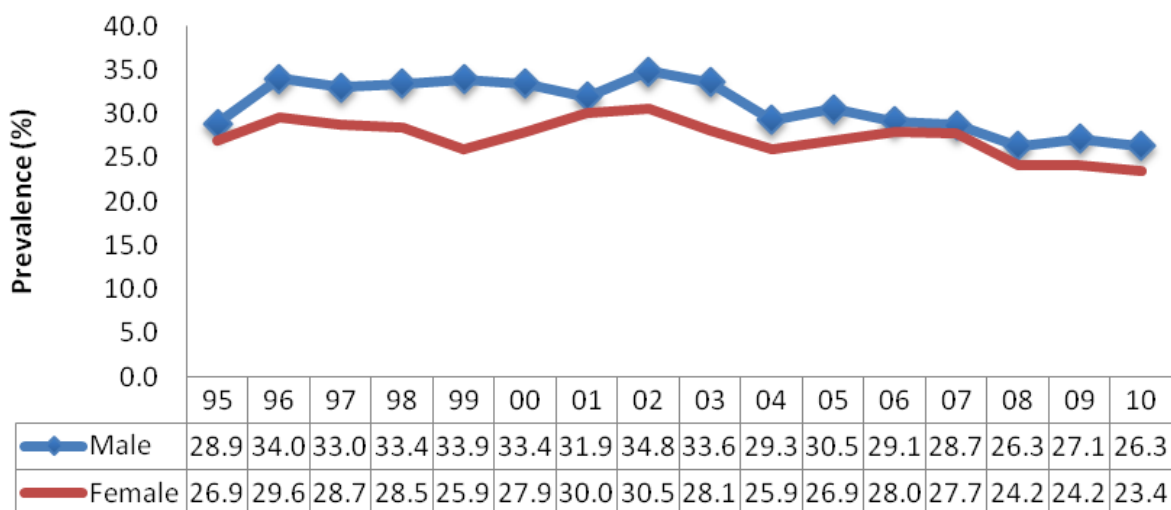
Map 1. Prevalence of Current Smoking by Area Development District, 2010²



Gender/Age

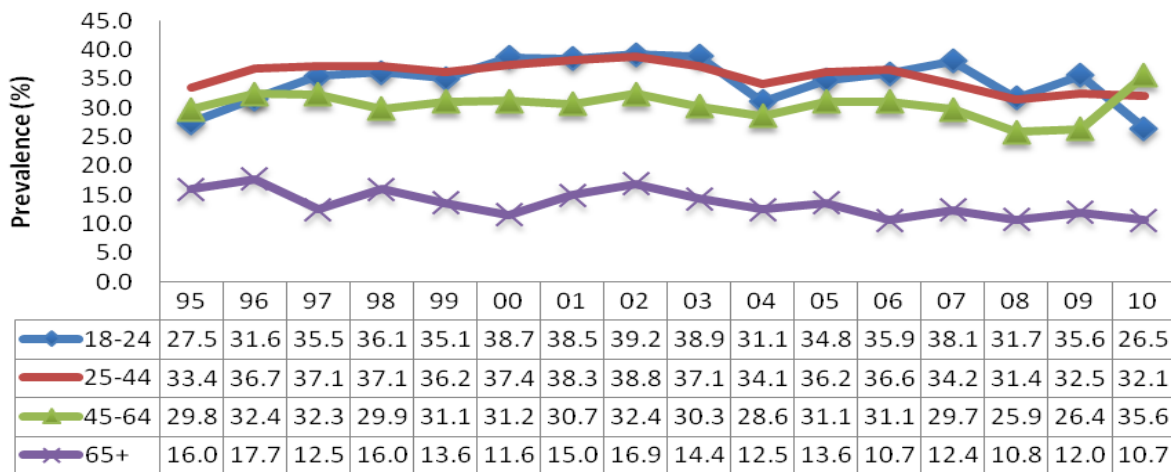
Kentucky men have consistently reported higher smoking prevalence rates compared to women. Since 1995, smoking prevalence rates for males and females have decreased by 9% and 13%, respectively (Figure 9).

Figure 9. Smoking Prevalence Among Kentucky Adults by Gender, 1995-2010²



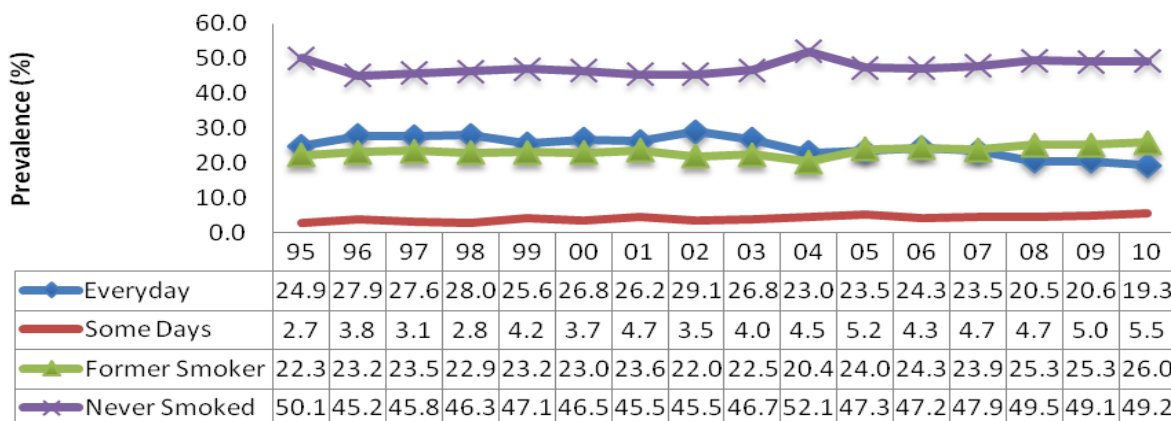
While overall smoking has decreased, smoking prevalence rates broken down by age group show relatively constant rates. Young adults aged 18-24 consistently reported the highest rates of smoking, with the 25-44 year-old age group mirroring their trend closely. In 2010, respondents age 18-24 showed a statistically significant shift in the percent of smokers, dropping from 35.6% in 2009 to 26.5% in 2010. For the first time since 1995, young adults age 18-24 showed a lower smoking prevalence when compared to those aged 25-44 and 45-64. Adults age 65 and older continued to show the lowest smoking prevalence, well below 15% since 2003 (Figure 10).

Figure 10. Smoking Prevalence Among Kentucky Adults by Age Group, 1995-2010²

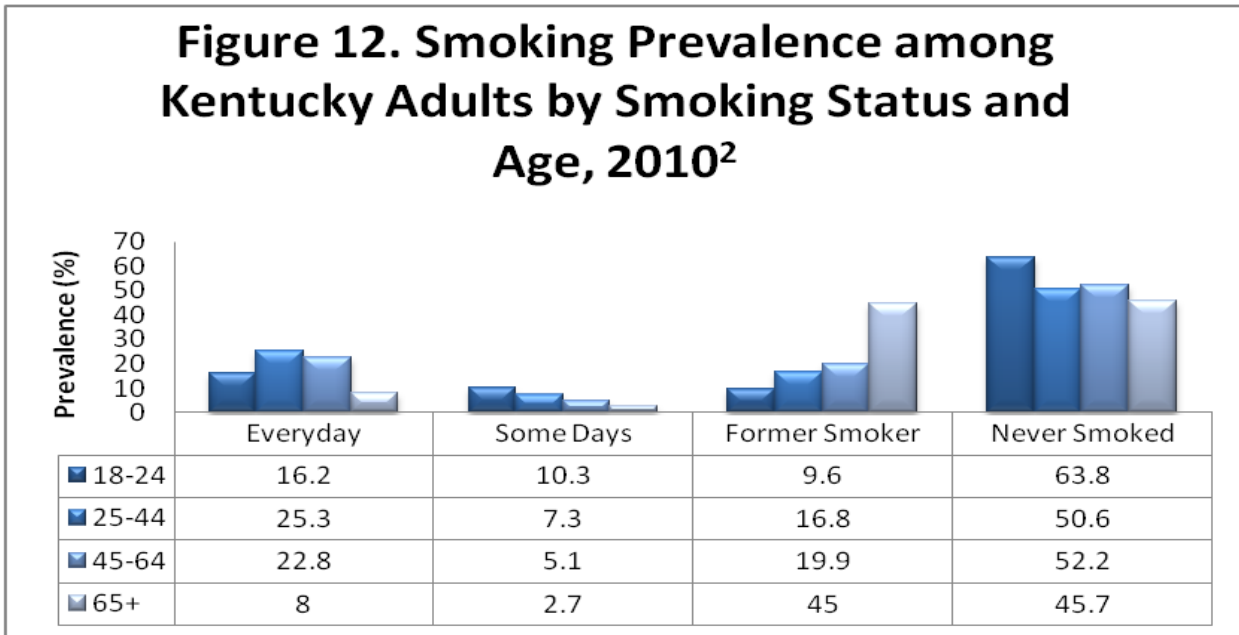


Everyday smoking has decreased consistently since peaking in 2002 at 29.1%, and reaching a low of 19.3% in 2010 (Figure 11). Comparatively, the national average for everyday smoking was 12.3% for 2010. At the same time, former smokers have increased from 22.3% in 1995, to 26% in 2010, a positive shift of approximately 10%. Never smokers have remained relatively consistent, peaking at 52.1% in 2004, and settling at 49.2% in 2010.

Figure 11. Smoking Prevalence among Kentucky Adults by Smoking Status, 1995-2010²



Respondents aged 25-44 had the highest prevalence of everyday smoking, 25.3%, in 2010. In contrast, the highest percent of never smokers, 63.8%, was found among the 18-24 year old age group (Figure 12). At 8%, respondents within the 65+ age group had the lowest percent of everyday smokers.



Smokeless Tobacco

Although the prevalence of smokeless tobacco product use is significantly lower when compared to smoking, the serious health harms caused by smokeless tobacco products are cause for great concern. The U.S. Surgeon General (2000) reports that chewing tobacco (“chew”, “dip”, or “spit-tobacco”) causes nicotine addiction, oral cancer and gum disease, as well as an increase in the risk of cardiovascular disease, including heart attacks. Prolonged exposure to tobacco juice can also cause cancer of the esophagus, pharynx, stomach and pancreas. The U.S. Surgeon General’s Report (1986) states that smokeless tobacco “is not a safe substitute for smoking cigarettes”.

In Kentucky, use of smokeless tobacco products is slightly higher overall than other parts of the country and also higher among men, young adults age 18-24, adults with a high school education or less, and adults who also smoke. Approximately 4% of adults nationwide use smokeless tobacco compared to about 4.2% of Kentucky adults. Recent Kentucky Adult Tobacco Survey data indicate that smokeless tobacco use among adults in Kentucky remains constant, and that men are more likely to use smokeless tobacco than women.

Current Tobacco Use among High School Students

Preventing initiation of tobacco use among young people is one of four CDC goals aimed at reducing overall tobacco use. Many lifetime users begin smoking prior to high school graduation. The CDC further proposes that policies and interventions aimed at preventing the initiation of tobacco use among the youth population have the potential to reduce the number of people affected by tobacco-related disease later in life (CDC, 2011d).

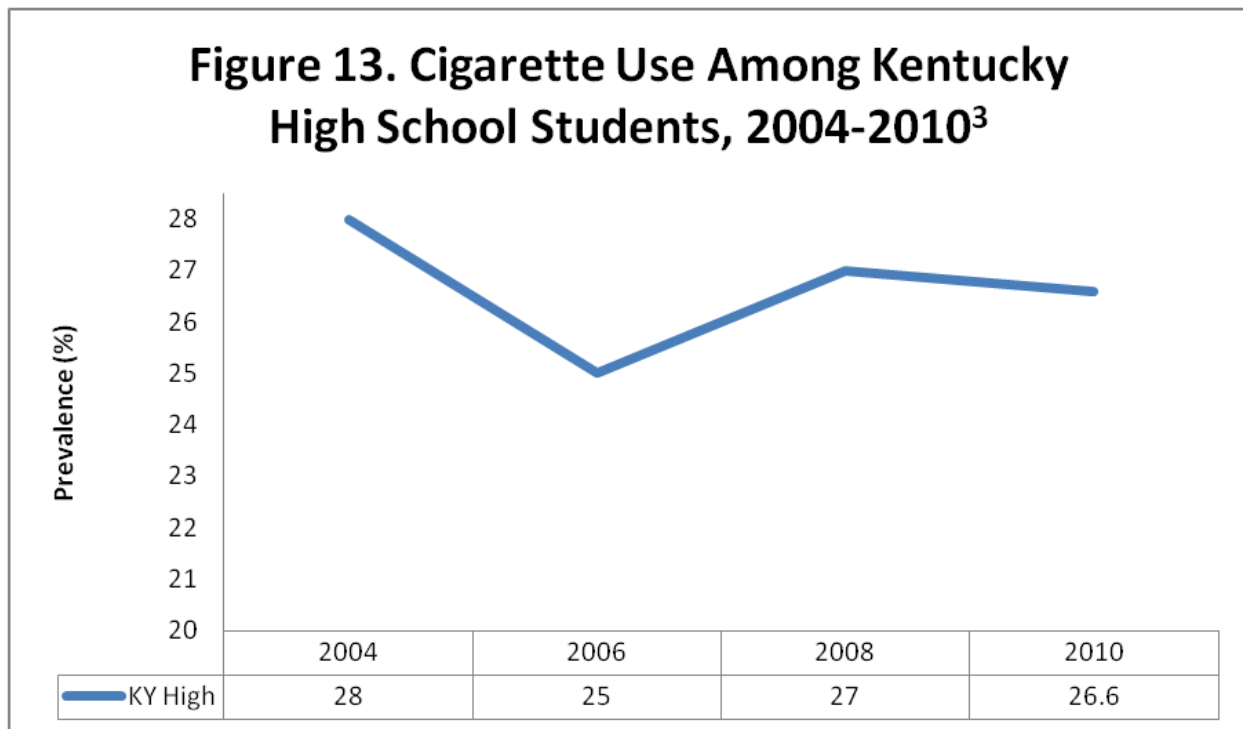
Parents words and actions communicate influential messages to their children, particularly in regard to tobacco use. Studies have shown that parental actions, attitudes, and opinions about smoking have a great deal of influence on whether or not their kids smoke.

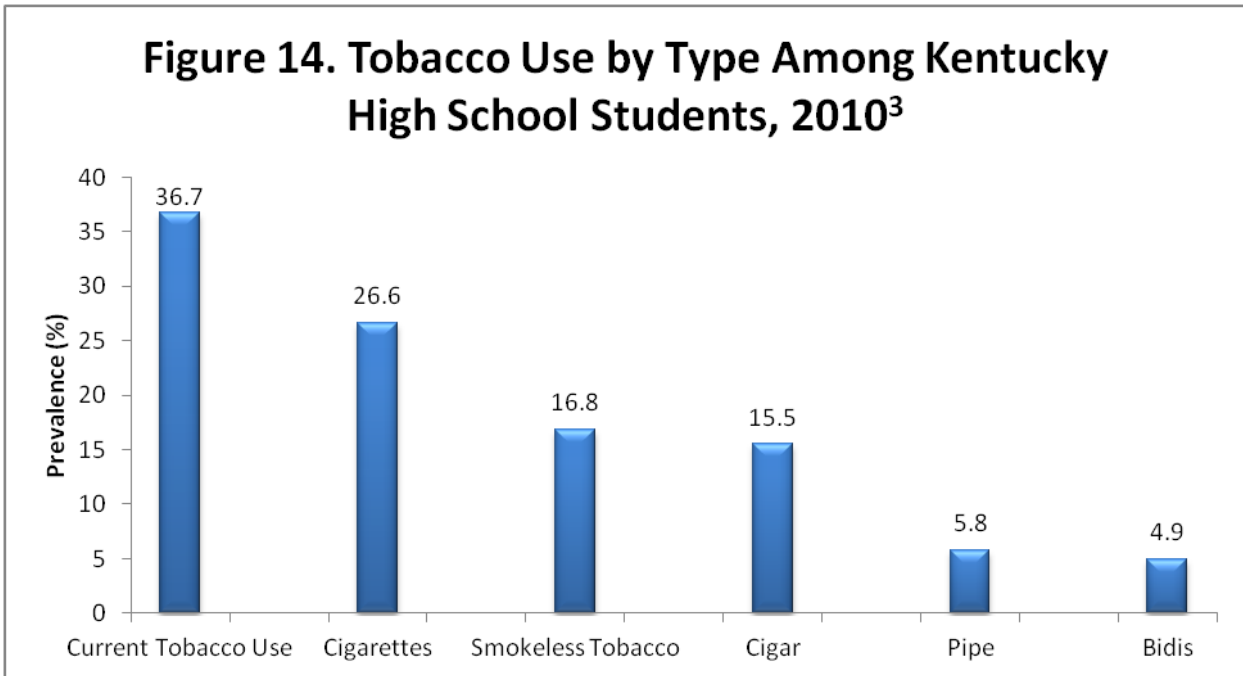
Tobacco Use in Kentucky 2011

A recent study found that parental antismoking actions such as having restrictions about smoking in the home or sitting in non-smoking sections of restaurants are associated with reductions in children's smoking (CDC, 2011d). Research also shows that children who have a parent who smokes are more likely to smoke and to be heavier smokers at young ages. When parents quit smoking, their children become less likely to start smoking and more likely to quit if they already smoke.

According to the CDC (2011d), more than 80% of current smokers 18 years and older reported they became regular smokers before or at the age of 18. Therefore, the years prior to age 18 represent a crucial time for influencing patterns of tobacco use. This is expressly demonstrated by the dramatic increase in the number of individuals who try tobacco in grade 12 compared to grade 6. Prior to high school graduation, approximately 7 out of 10 students surveyed have tried tobacco, with more than 1 in 3 becoming regular users. Compared to individuals in middle school, students in 12th grade trying tobacco nearly doubles (64.3% versus 37.6%) and the number who report currently using any tobacco products also increases by two-fold (36.7% versus 16.6%).

Although cigarette use among high school students in Kentucky has declined overall since 2002, youth cigarette use showed a slight increase in 2008 (Figure 13). Results from the 2010 Kentucky Youth Tobacco Survey estimate current cigarette use among high school students in Kentucky to be approximately 27%, a significant decline from the 34% reported in 2002.





The 2010 Kentucky Youth Tobacco Survey found that 36.7% of high school students in the state use some form of tobacco (Figure 14). Although not shown in the figure, approximately 55% of high school respondents reported having tried smoking. Figure 15 breaks down smoking rates among high school students in Kentucky by demographic group. As demonstrated in the figure, smoking percentages increase in accordance with grade level.

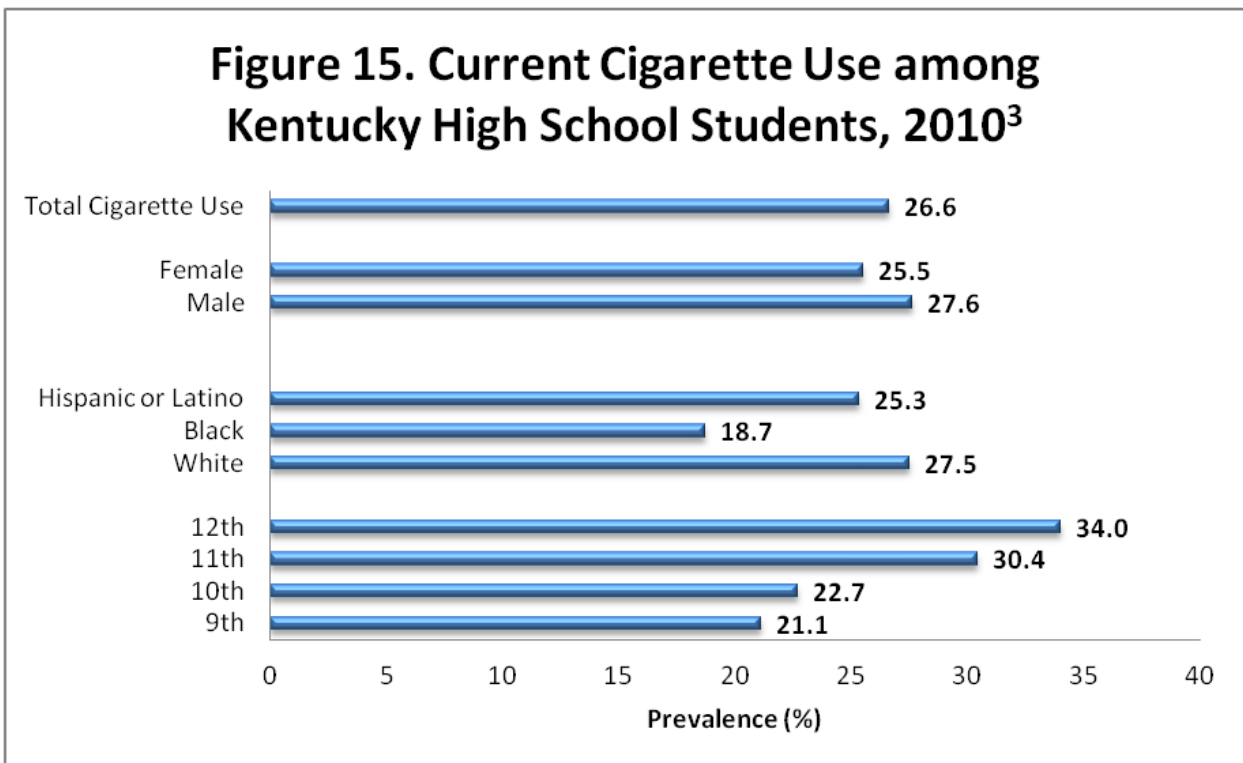
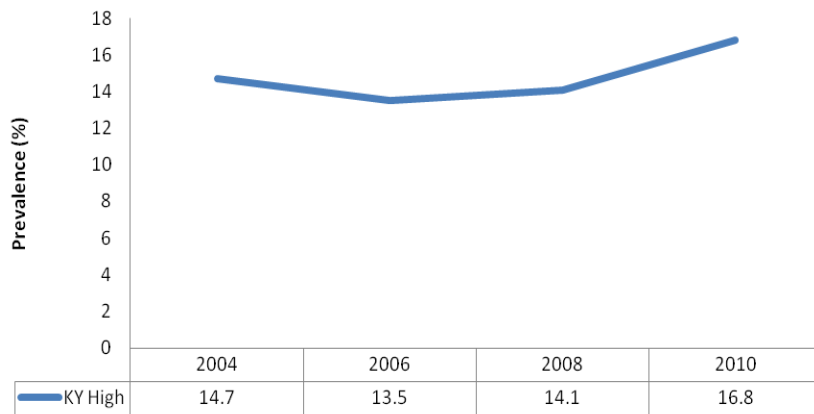


Figure 16. Smokeless Tobacco Use Among Kentucky High School Students 2002-2010³



Data from the 2010 Kentucky Youth Tobacco Survey indicate that the use of smokeless tobacco among Kentucky high school youth has increased since 2006, peaking at 16.8% in 2010 (Figure 16). Smokeless tobacco rates were highest among high school males. In 2010, 28.4% of Kentucky high school males reported currently using smokeless tobacco.

Current Tobacco Use among Middle School Students

According to the 2010 KYTS, approximately 9% of Kentucky middle school students reported current cigarette use, down from 14.7% in 2004 (Figure 17).

Figure 17. Cigarette Use Among Kentucky Middle School Students, 2002-2010³

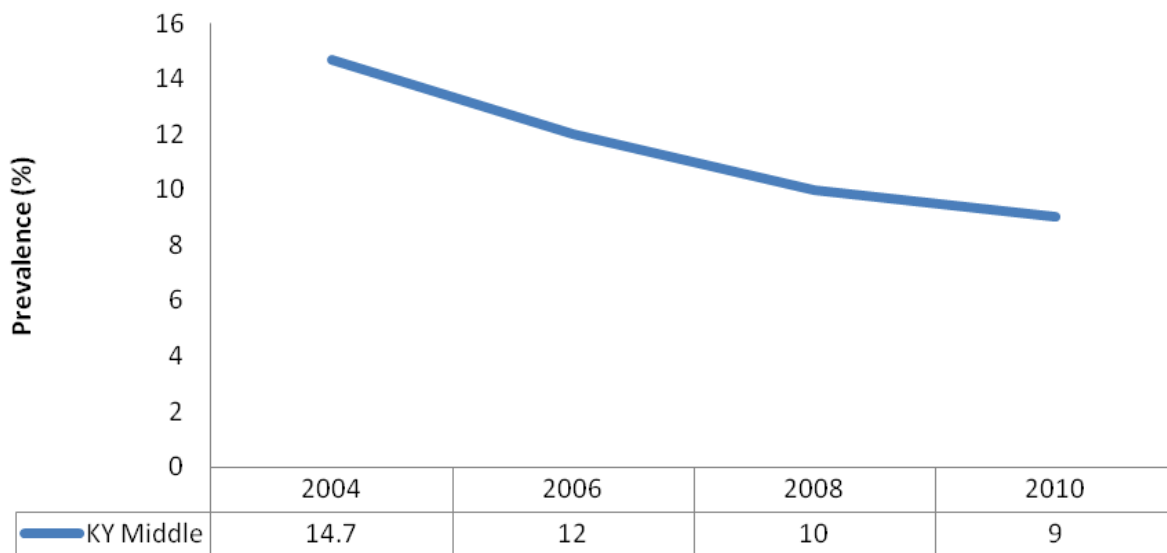
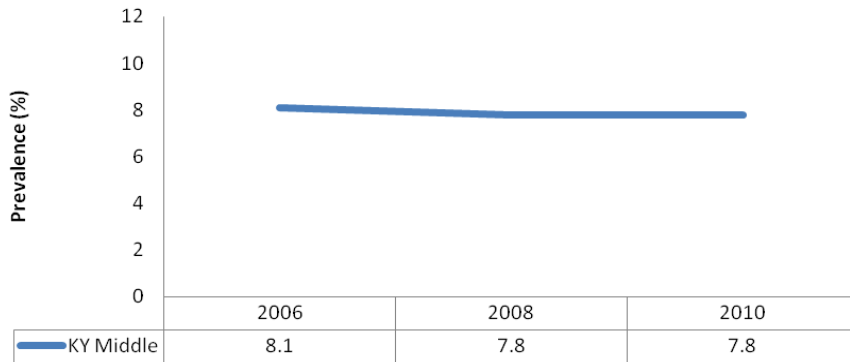


Figure 18. Smokeless Tobacco Use Among Kentucky Middle School Students, 2006-2010³



Among Kentucky middle school students, approximately 7.8% reported current smokeless tobacco use in 2010, representing no change from 2008 (Figure 18). Due to small sample size, data were not available for smokeless tobacco rates among Kentucky middle school students in 2004.

In 2010, 16.6% of Kentucky middle school students reported current use of some form of tobacco, with 9% reporting current cigarette use (Figure 19).

Figure 20 illustrates cigarette use in Kentucky middle schools by demographic groups. In Kentucky, male middle school students

Figure 19. Tobacco Use by Type Among Kentucky Middle School Students, 2010³

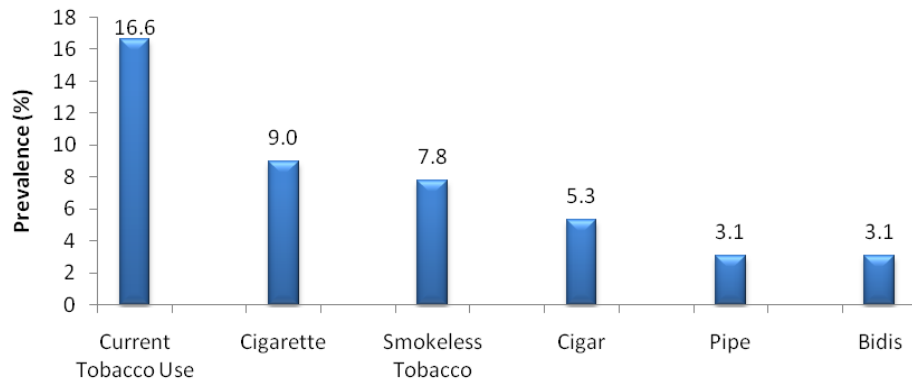
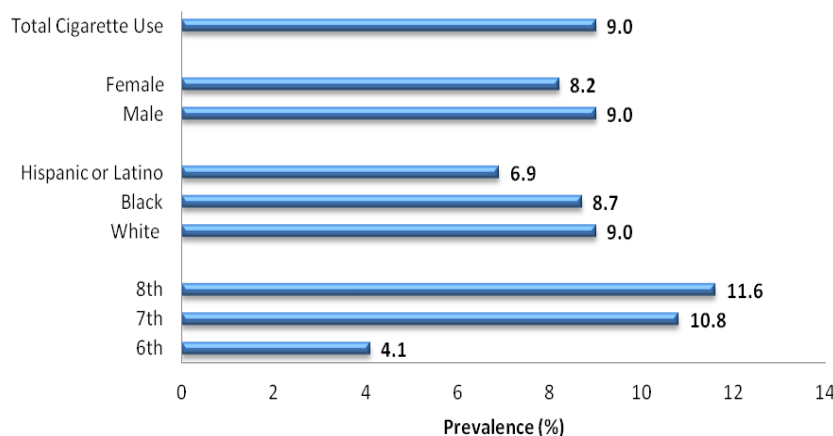


Figure 20. Current Cigarette Use Among Kentucky Middle School Students, 2010³



were slightly more likely to report current cigarette use than women, at 9% and 8.2%, respectively. White students also reported smoking at 9%, slightly higher than black students (8.7%), and significantly higher than Hispanic or Latino students (6.9%). Similar to high school students, cigarette use increased with grade in school, with approximately 11.6% of eighth grade respondents reporting current cigarette use compared to less than 5% of sixth grade students.

Promote Cessation of Tobacco Use in Adults and Youth

According to the 2010 Kentucky Adult Tobacco Survey, over 60% of smokers in the state want to quit. Additionally, nearly 60% of Kentuckians reported asking for advice on how to quit smoking from a health care professional. Quitlines are evidence-based intervention programs that offer one-on-one counseling for tobacco users. Established in 2005, Kentucky's Tobacco Quitline provides individualized cessation counseling for all tobacco users, including specific protocols for pregnant women. English and Spanish language counselors are available, in addition to a TDY number for individuals who are deaf or hard of hearing. The addictive nature of tobacco makes quitting a challenge; however, with effective treatments (counseling and nicotine replacement therapy), smokers and other tobacco users have a greater chance of succeeding in their attempts to become tobacco-free.

Map 2 illustrates the location of individuals who made an initial call to the Kentucky Tobacco Quitline, by area development district in 2010. Green River, Northern Kentucky, KIPDA, and the Bluegrass area development districts showed the highest call volume for 2010, while Gateway, Buffalo Trace, and Kentucky River represent the lowest call volume.

Map 2. Kentucky's Tobacco Quitline Callers by Area Development District, 2010⁵

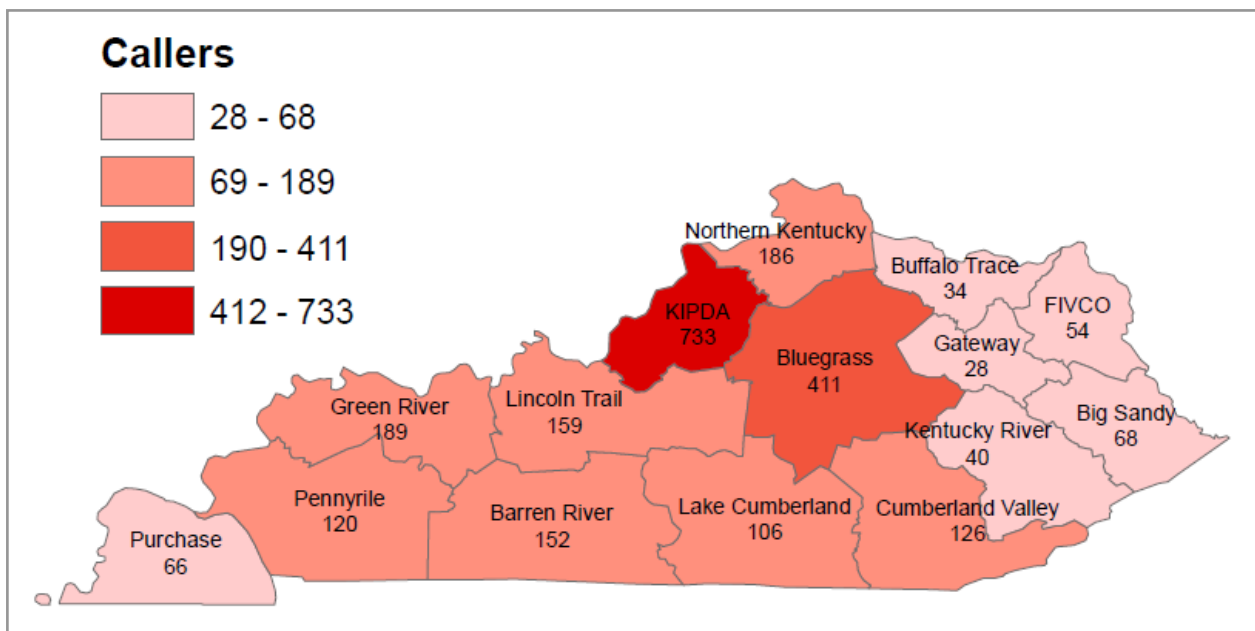


Figure 21. Quitline Awareness Among Kentucky Adults, 2010⁶

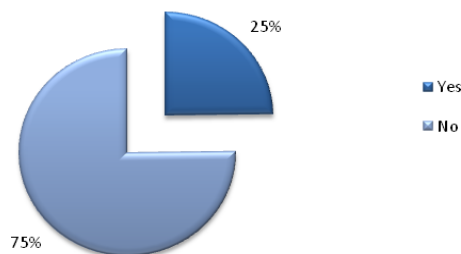
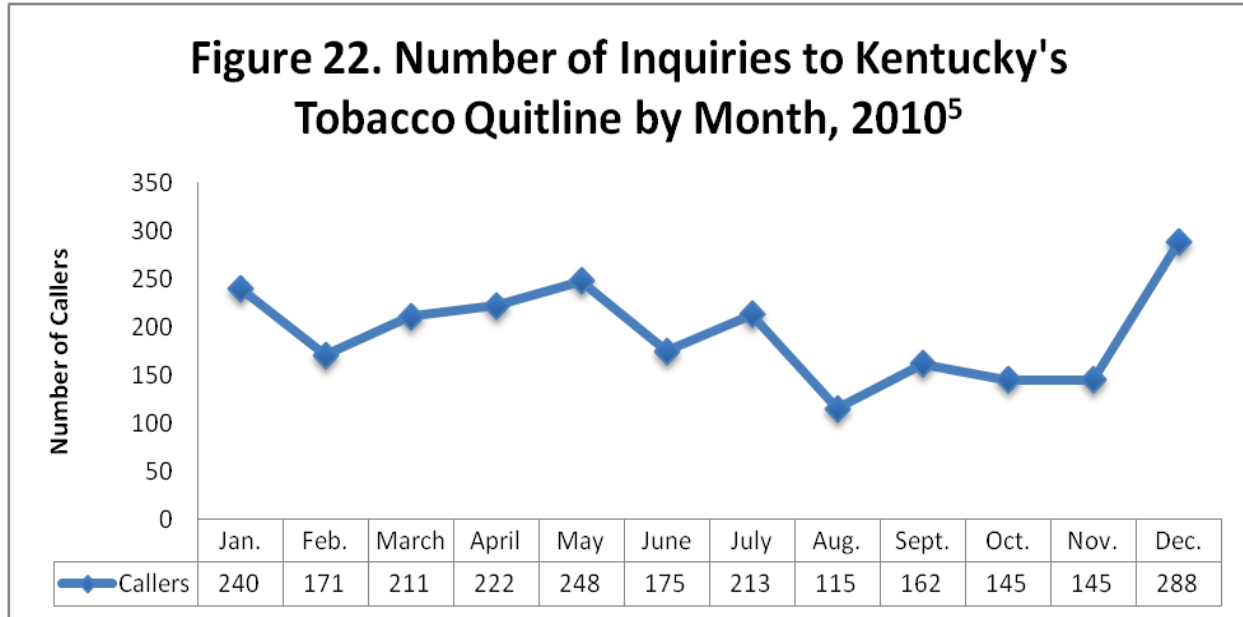


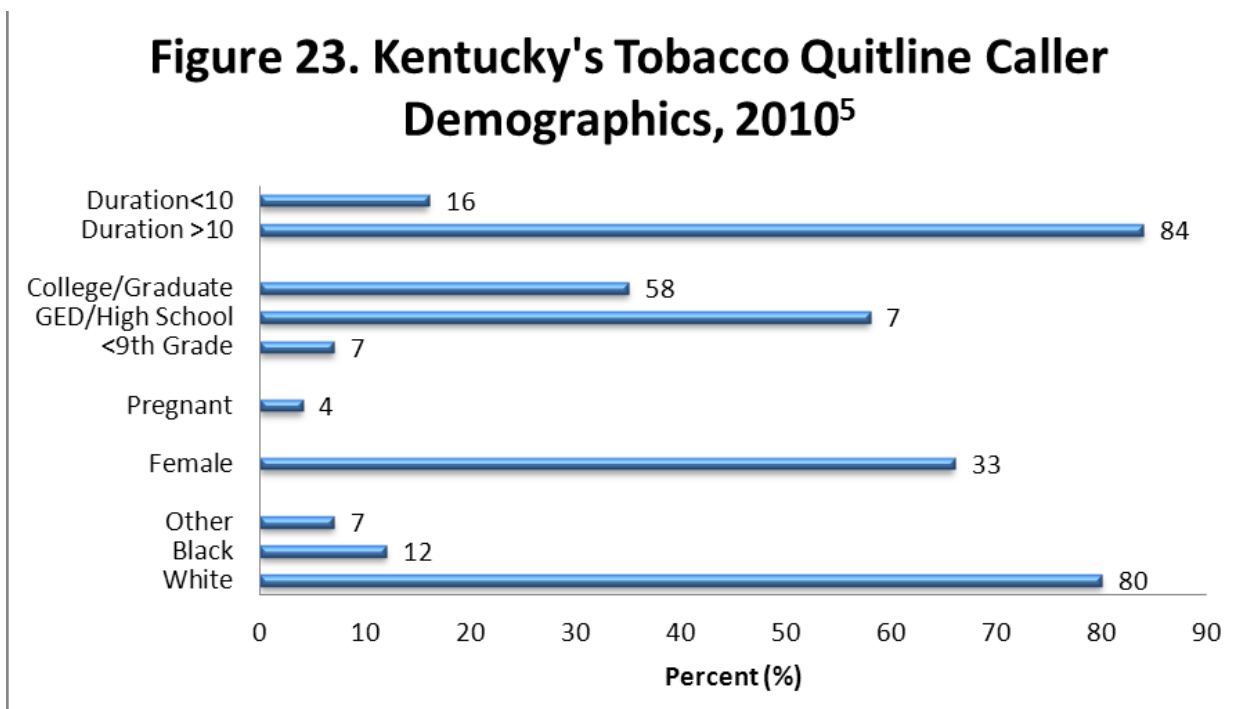
Figure 21 provides insight into current awareness of Kentucky's Tobacco Quitline. Approximately 25% of respondents reported previous knowledge of Kentucky's Tobacco Quitline, of which 66% were female.

Tobacco Use in Kentucky 2011

Figure 22 depicts new inquiries to Kentucky's Tobacco Quitline in 2010 by month. Quitline call activity peaked in December and January, with lows in from August through November. According to research, December and January call numbers peak due to a "New Year's resolution" effect; callers who wish to quit at the beginning of a new year. Although media promotion is limited, Kentucky's Tobacco Quitline utilizes partnerships and local health departments for promotional assistance.



According to Figure 23, a majority of callers to Kentucky's Tobacco Quitline were white, female, and reported an educational achievement equivalent to high school or GED (General Educational Development). Callers to Kentucky's Tobacco Quitline were more likely to have smoked more than 10 years, as evidenced in Figure 23. Additionally, approximately 4% of female callers reported being pregnant.



Reducing Exposure to Secondhand Smoke

Eliminating nonsmokers' exposure to secondhand smoke is a major component of the CDC's comprehensive tobacco program goals. Local smoke-free air laws and ordinances are a critical step toward achieving statewide smoke-free air in Kentucky. In 2004, the Lexington-Fayette Urban County Government became the state's first community to enact a local smoke-free air policy. Nearly seven years later, state Representative Susan Westrom (D-Lexington) introduced a bill to the legislature that would prohibit smoking in all public indoor workplaces with at least one employee, including restaurants, bars and private clubs. Although the state has yet to pass smoke-free legislation, many counties and municipalities have followed Lexington-Fayette County's example, and have enacted city or county ordinances, as well as board of health regulations.

Smoke-Free Policy

According to the U.S. Surgeon General (2006), smoke-free policies are the most economic and effective approach for providing protection from exposure to secondhand smoke. Eliminating nonsmokers' exposure to secondhand smoke is one of four CDC goals aimed at reducing the amount of tobacco-associated morbidity and mortality.

Types of smoke-free policies include voluntary policies implemented by businesses or organizations, regulations issued by accrediting agencies or boards of health, and laws enacted by local or state governments. Policies are implemented to provide protection from secondhand smoke exposure, to create healthier environments, and to change social norms around tobacco use. Additionally, smoke-free policies may also have the added benefit of encouraging smokers to reduce their overall tobacco consumption and aiding those who want to quit.

Figure 24. Kentucky Indoor Workplace Smoking Policy, 2008⁷

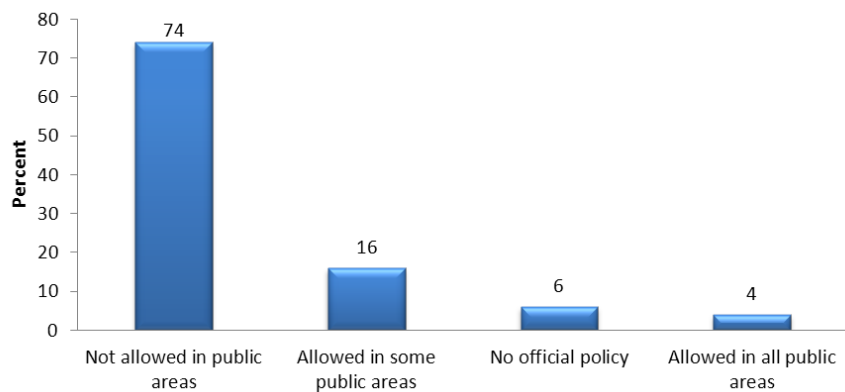
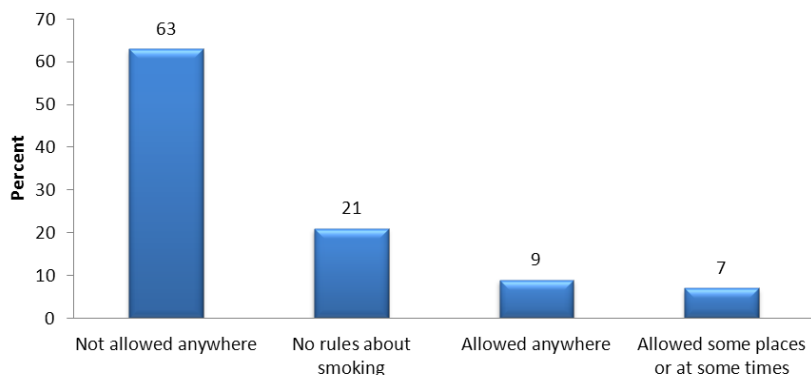


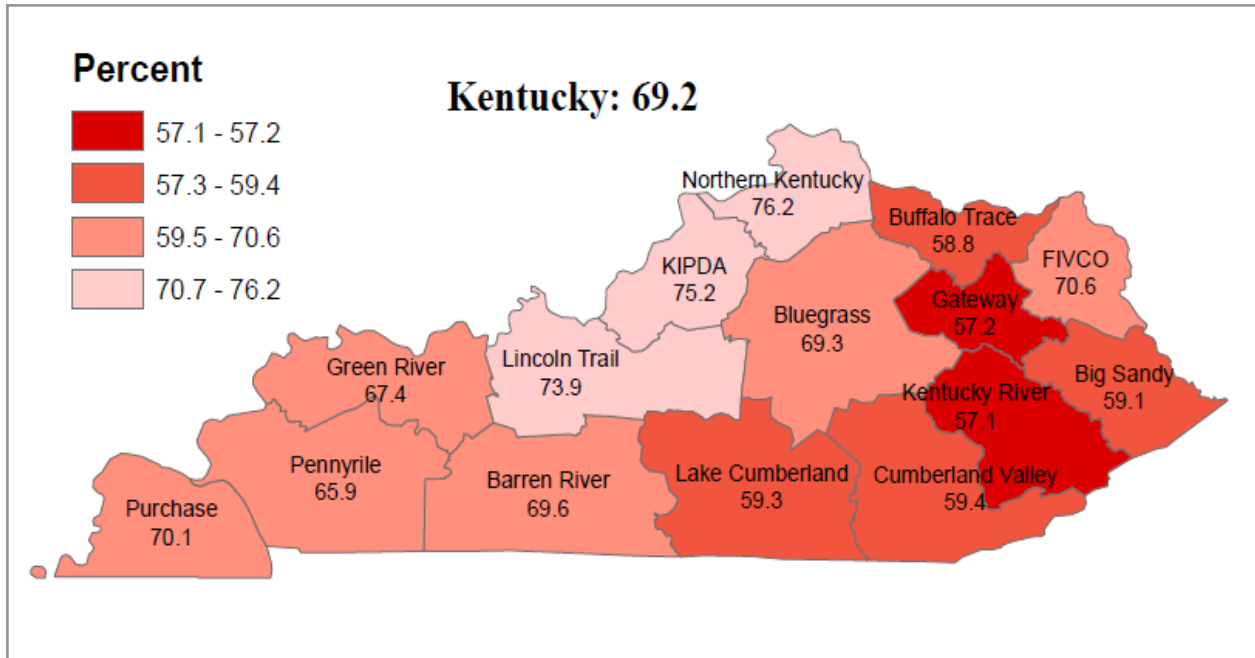
Figure 25. Smoking Policies in Kentucky Homes, 2009²



Tobacco Use in Kentucky 2011

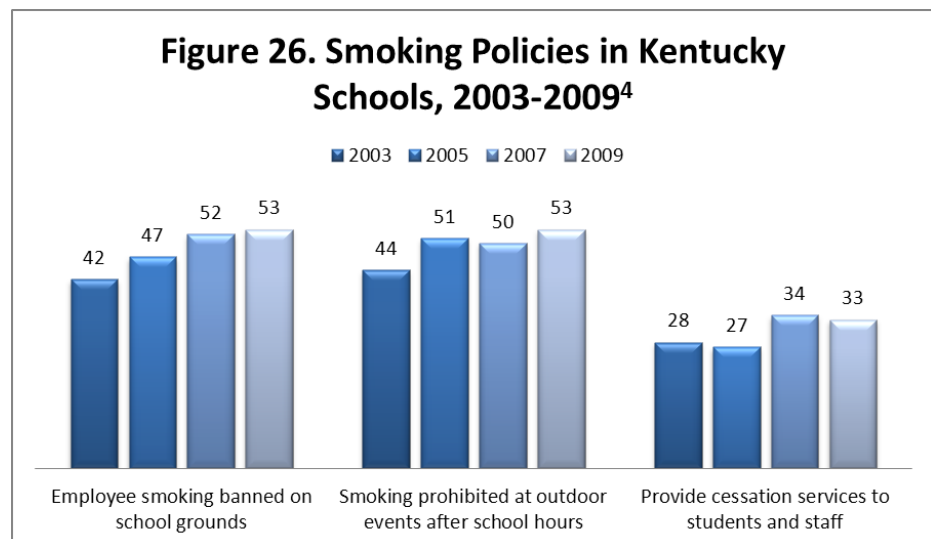
In 2008, the Kentucky Center for Smoke-Free Policy conducted a survey of indoor workplace policies in Kentucky. Figure 24 details the official work policy for indoor public or common areas, including lobbies, lunch rooms, and restrooms, while Figure 25 and Map 3 reflects smoking policies in Kentucky homes.

Map 3. Percent of Smoke-free Homes in Kentucky by Area Development District, 2009²



According to the 2009 School Policy Survey conducted by the Tobacco Policy Research Program at the University of Kentucky, approximately 99% of Kentucky's high, middle, and elementary schools prohibit indoor smoking for students, teachers, and visitors. In 2009, only 53% of surveyed schools ban employee smoking on school grounds, similar to the figure found in the 2007 survey (Figure 26). Similarly, 53% prohibit smoking at outdoor events that occur after school hours, up from 49.7% in 2007. As illustrated, both the prohibition of employee smoking on school grounds, and of smoking at outdoor events after school, have gradually increased since 2003.

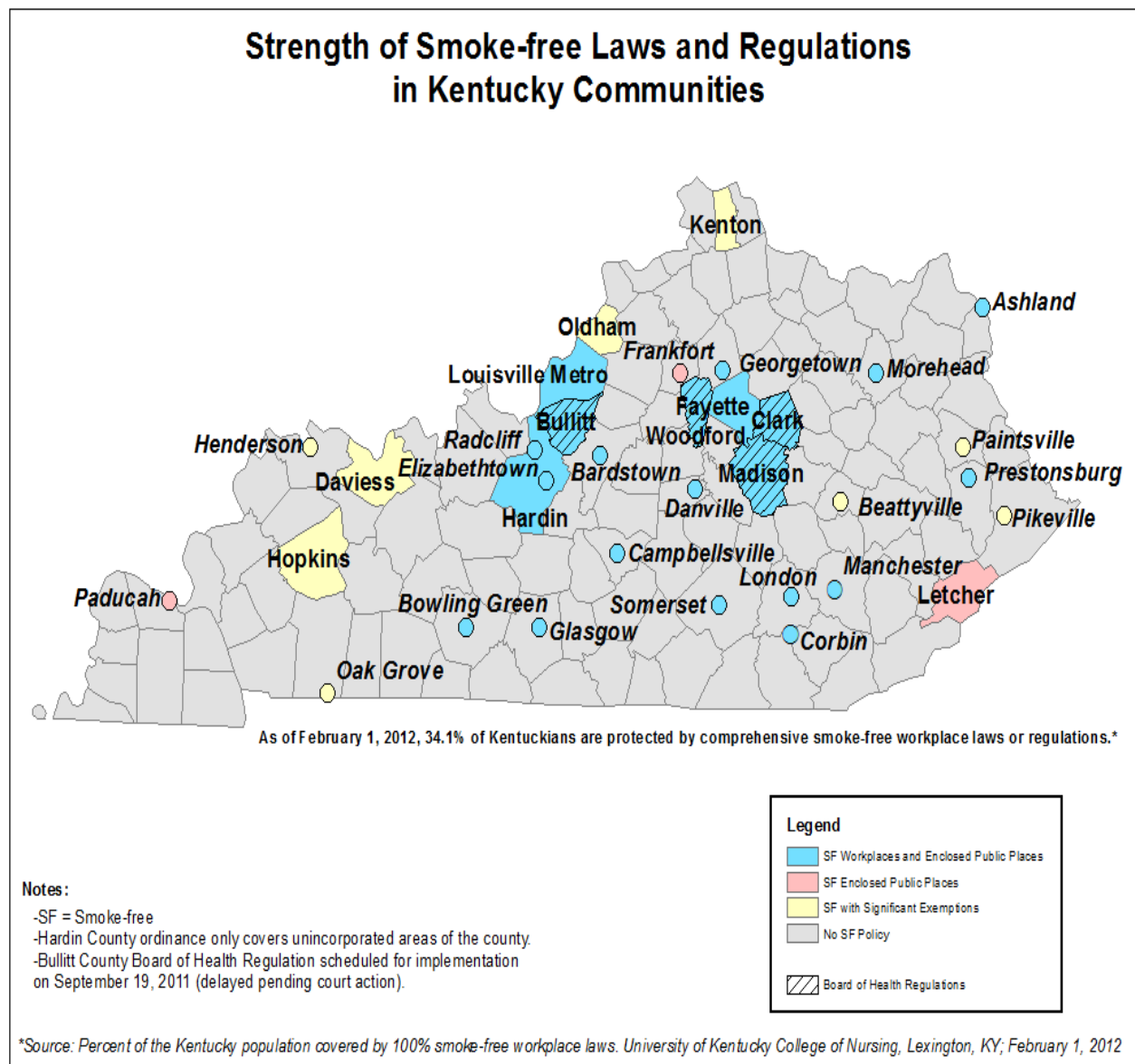
When students violate school smoking policy the first time, 6.7% of schools required the student to enroll in a tobacco education program, 1.2% provided voluntary cessation classes, and 1.7% mandated a tobacco cessation class. Approximately 33% of schools provided direct tobacco cessation services to students or employees.



Tobacco Use in Kentucky 2011

Map 4 identifies geographic areas with city or county smoke-free ordinances. As of January 2011, approximately 31.5% of Kentuckians are protected by comprehensive smoke-free laws or regulations. Due to the higher population concentration in Lexington and Louisville, the laws in Louisville-Jefferson County and Lexington-Fayette County protect the majority of Kentuckians. Jefferson and Fayette Counties also show the highest call volume to the Kentucky's Tobacco Quitline when compared with all other area development districts.

Map 4. Smoke-Free Laws and Regulations in Kentucky, 2012⁸



Identify and Eliminate Health Disparities

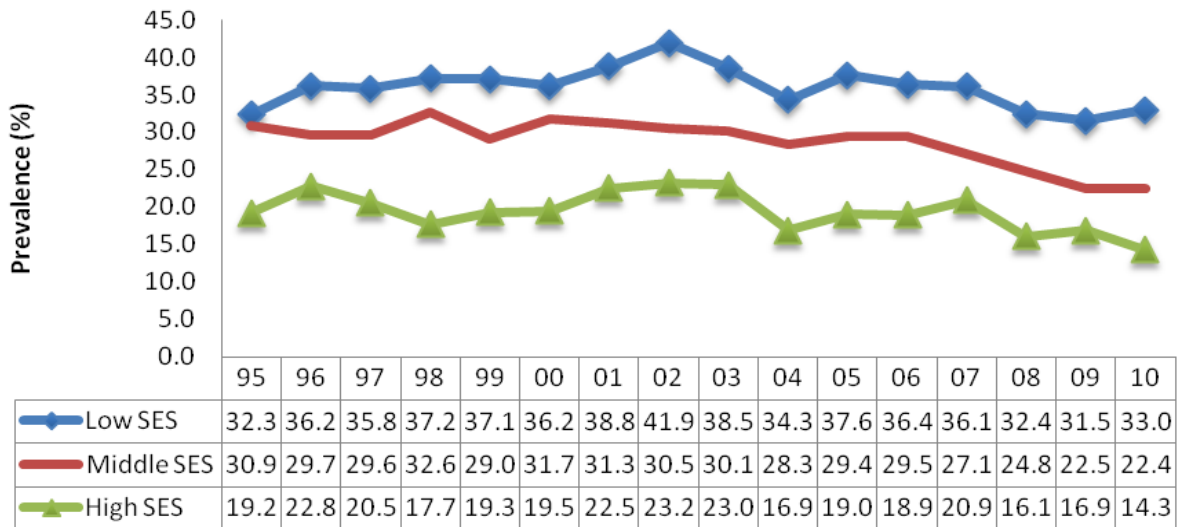
Tobacco-related disparities are “differences in patterns, prevention, risk, incidence, morbidity, mortality, and burden of tobacco-related illness that exist among specific population groups in the U.S.; and related differences in capacity and infrastructure, access to resources, and environmental tobacco smoke exposure.”¹¹ Disparate populations include individuals with low-incomes; individuals with low education; Hispanics; African-Americans; lesbians, gays, bi-sexual and transgender (LGBT) individuals; and a variety of other groups with demographically similar characterizations.

As Table 4 highlights, in 2010 African Americans reported a disproportionate smoking prevalence of 25.7%, compared to 25.1% of white respondents. In 1996, African American males reported a lower smoking prevalence rate (27.6%) compared to their non-Hispanic white counterparts (31.7%), and lower than the overall smoking prevalence rate in Kentucky (31.7%). In 2010, African American females showed significantly lower smoking prevalence rates when compared to non-Hispanic white females, 18.4% and 24%, respectively. The Hispanic respondent sample size was insufficient to make inferences to the general population.

	1996	2000	2004	2008	2010
African American	27.6	26.8	28.7	27.6	25.7
White	31.7	30.9	27.5	25.0	25.1
Hispanic	N/A	N/A	11.8	18.3	16.6

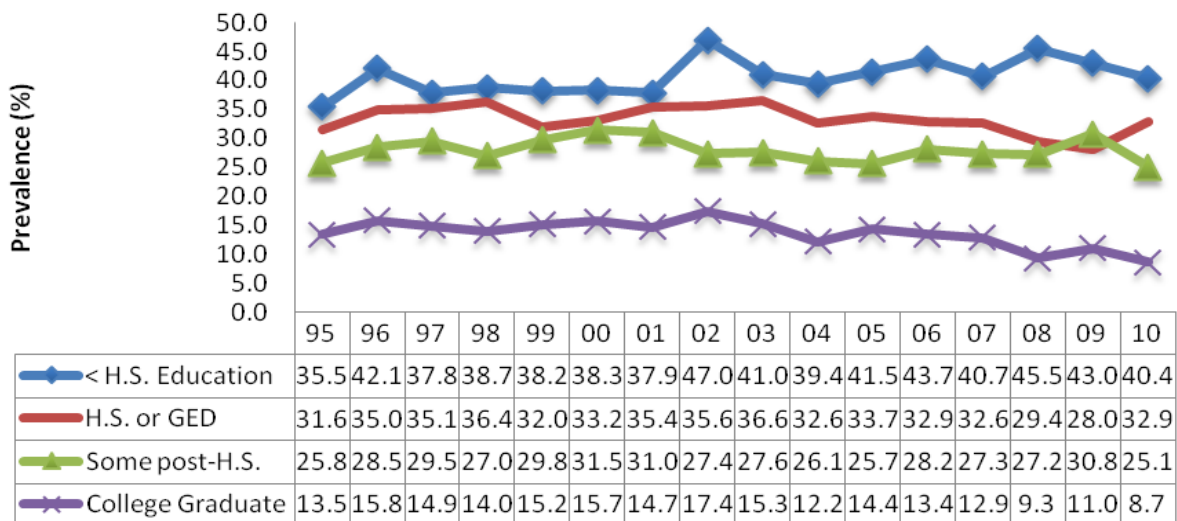
As presented in Figure 27, there is an inverse relationship between income and smoking. As income increases, the percentage of smokers decreases. High smoking prevalence rates among those reporting low socioeconomic status (SES) are a priority population in Kentucky. Since 1995, smoking prevalence among low SES groups (low: household income less than \$24,999; middle: \$25,000-\$49,999; high: more than \$50,000) has remained the highest among the three household income levels, with 33% reporting smoking in 2010. Forty-one percent of Kentuckians with an income of less than \$15,000 annually smoke.

Figure 27. Smoking Prevalence among Kentucky Adults by SES, 1995-2010²



Data from BRFSS also reveal a direct correlation between educational attainment and smoking status. As shown in Figure 28, respondents with below high school educational attainment fluctuated from a low smoking prevalence of 35.5% in 1995, to a high of 47% in 2002, and declining slightly to 40.4% in 2010. College graduates consistently showed the lowest smoking prevalence rates, with 8.7% in 2009, a statistically significant decrease from the 11% prevalence rate reported the previous year.

Figure 28. Smoking Prevalence among Kentucky Adults by Education, 1995-2010²

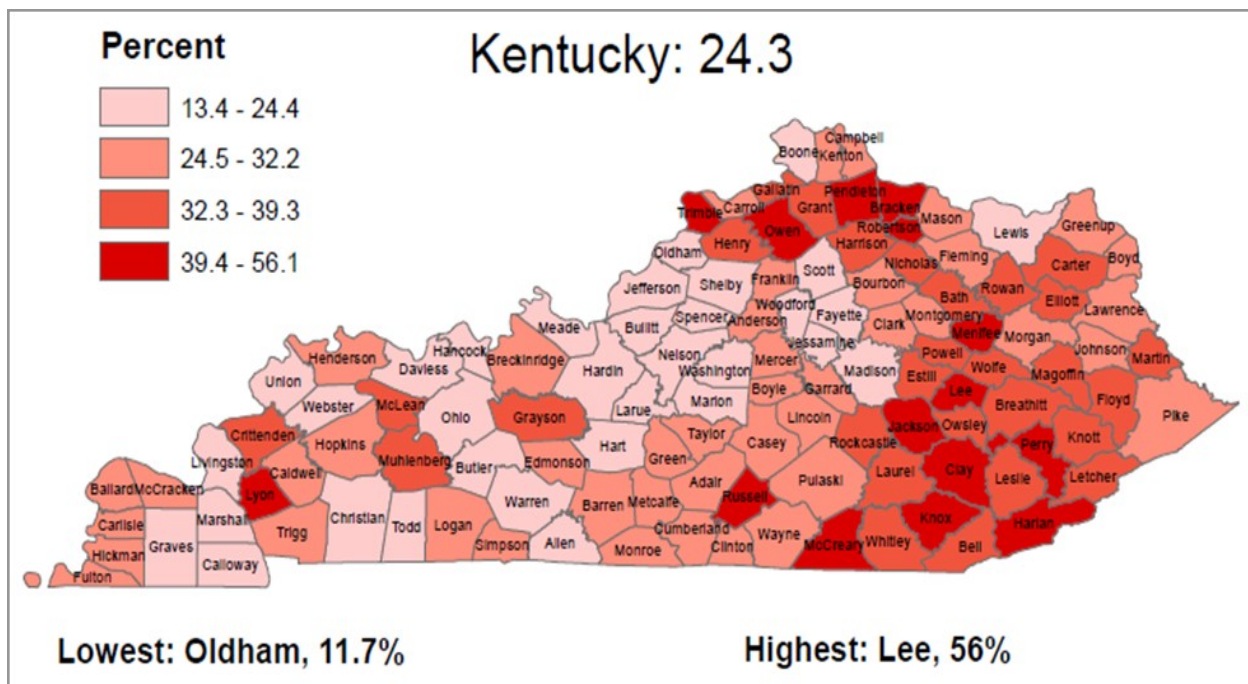


Pregnancy and Tobacco Use

Smoking during pregnancy is not only harmful to the health of the mother, but also that of her unborn child (CDC, 2011c). According to the CDC, smoking before and during pregnancy is the single most preventable cause of illness and death among mothers and infants. Although it is not known which of the over 2,500 chemicals contained in cigarette smoke are harmful to the developing fetus, previous studies have demonstrated that both nicotine and carbon monoxide are associated with negative pregnancy outcomes. Included among these adverse outcomes are low birth weight, sudden infant death syndrome (SIDS), pre-term delivery, placental complications, increased risk of miscarriage, fetal growth retardation, cleft lip and palate, spontaneous abortions, and development of childhood cancers (CDC, 2011c).

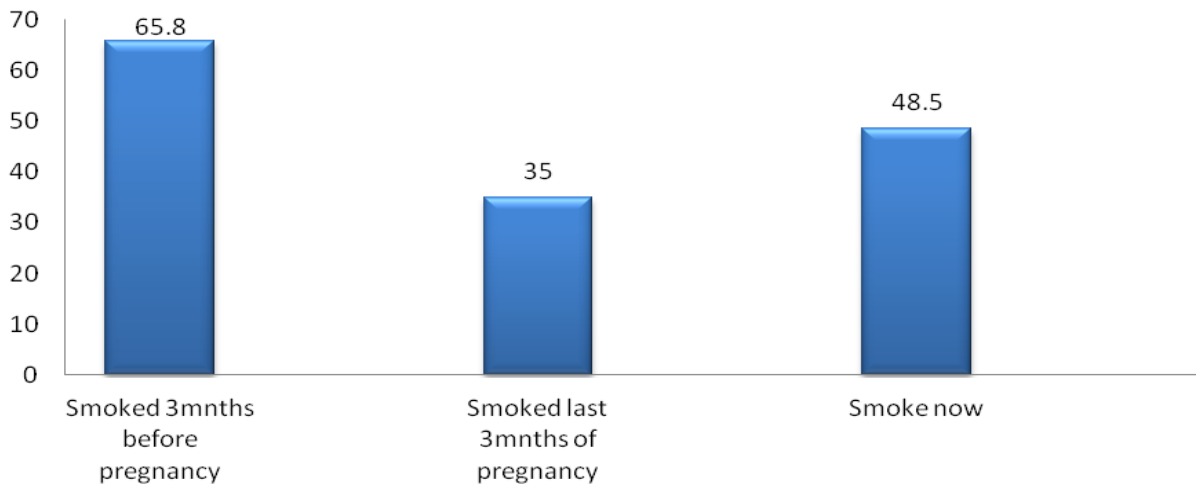
The prevalence of smoking during pregnancy in Kentucky is more than twice the national rate (Kentucky Vital Statistics, 2009). Map 5 outlines the percent of pregnant women in Kentucky who reported smoking, by county. Oldham County showed the lowest rate (11.7%), while Lee County was the highest (56%). Overall, 24.3% of women with live births in Kentucky reported smoking during pregnancy in 2009. Due to differences in birth certificates, we are unable to make statistical comparisons between states.

Map 5. Prevalence of Smoking among Pregnant Women by County, 2009⁹



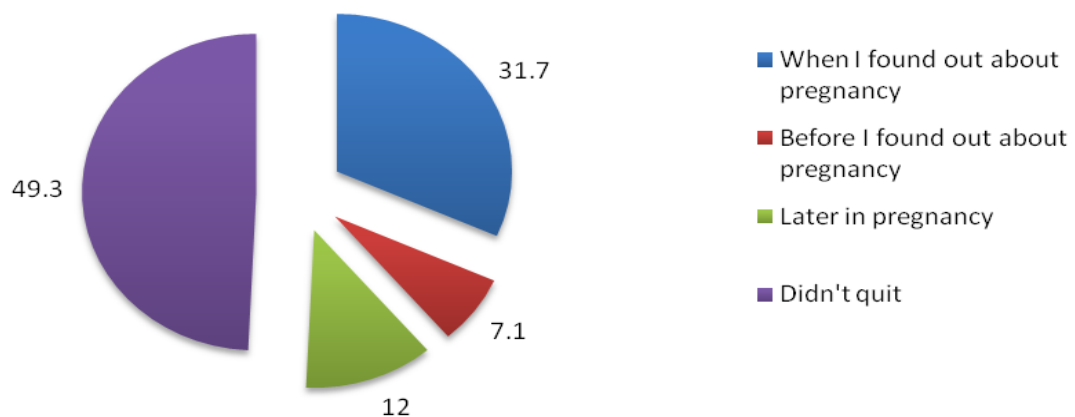
Approximately 66% of female smokers reported that they smoked three months prior to their pregnancy, while 35% reported smoking during the last trimester. This information, along with current smoking among women who reported any smoking behavior during and three months prior to pregnancy, is depicted in Figure 29. Research suggests that women who are Caucasian, unmarried, with lower educational attainment and lower income are more likely to smoke during pregnancy (CDC, 2011c).

Figure 29. Kentucky Percent of mothers that smoked throughout their pregnancy, 2008¹⁰



According to the 2008 PRAMS report, approximately 49% of Kentucky mothers who reported smoking indicate they didn't quit smoking during pregnancy (Figure 30). The PRAMS survey suggests that few pregnant women are accessing resources to help them quit smoking. Among pregnant women who smoked, 27.4% reported setting a quit date, 6.7% said they used educational materials to quit, 2.9% attended a class to stop smoking, 1.7% used a national or state sponsored quitline, 1.4% used nicotine gum and 0.9% used a nicotine patch. The PRAMS survey also found that, of those pregnant women who reported smoking during their pregnancy, approximately 41% indicated that their health care provider failed to discuss how to quit smoking.

Figure 30. Kentucky Percent of mothers who quit smoking during their pregnancy, 2008¹⁰



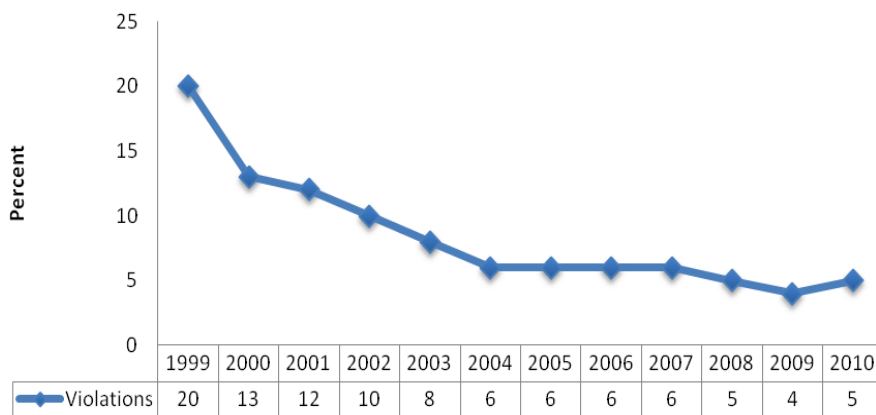
Reducing Youth Access

In 1992, Congress enacted the Synar Amendment to the Alcohol, Drug Abuse and Mental Health Administration Reorganization Act aimed at decreasing access to tobacco products among those under age 18. Synar requires states to enact and enforce laws prohibiting any manufacturer, retailer, or distributor from selling or distributing tobacco products to minors. To be compliant with Synar, Kentucky is required to maintain an 80% compliance rate. This means that in random compliance checks, there must be fewer than 20% successful illegal sales to minors. Kentucky has made considerable progress in attaining the goals of the Synar legislation. As Figure 31 indicates, Kentucky's illegal tobacco sales to minors has gradually declined from 20% in 1999 to 5% in 2010. When compared to national data, the Synar program in Kentucky has proven successful in reducing youth access to tobacco through retail sources. While the national weighted average retailer violation rate for the 50 states and District of

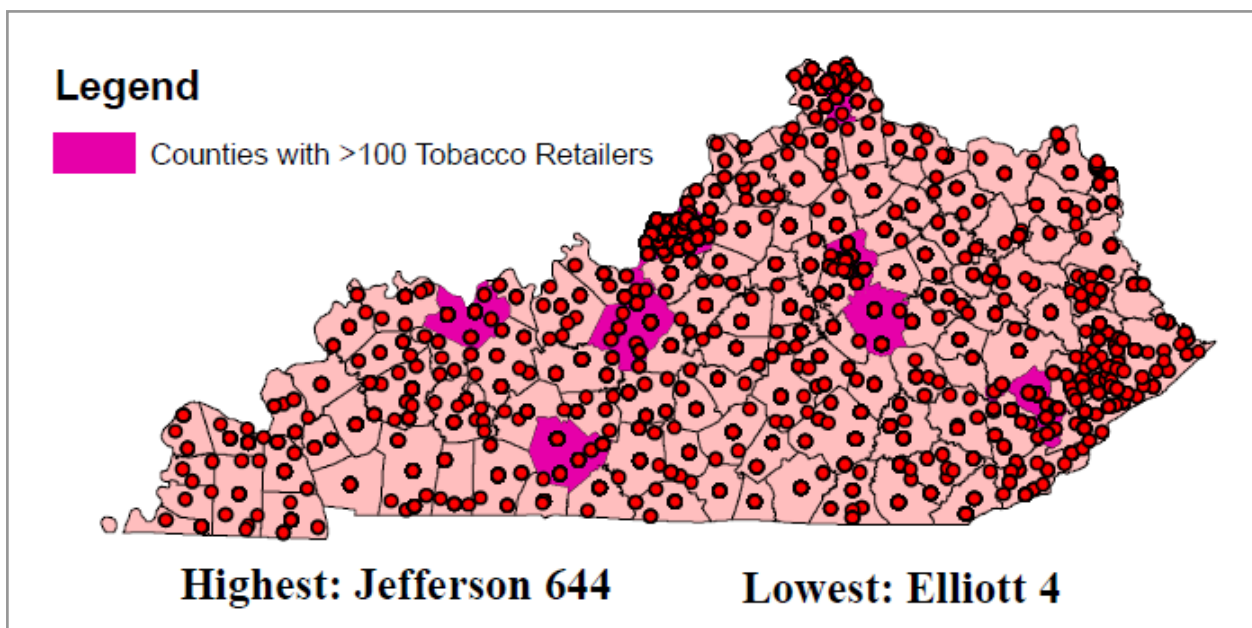
Columbia was 9.9% in 2008 (the most recent year available for national comparisons), Kentucky reported illegal sales to 5% of minors (SAMSHA, April 2011).

Map 6 identifies the density of tobacco retailers in Kentucky by county; in some counties the dots used to identify tobacco retailers overlap, due to the retailers close physical proximity.

Figure 31. Illegal Tobacco Sales to Minors in Kentucky, 1999-2008¹¹



Map 6. Density of Tobacco Retailers in Kentucky by County, 2011¹¹



Tobacco Use in Kentucky 2011

Results from the 2010 Kentucky Youth Tobacco Survey suggest that an estimated 27.5% of high school students who smoke acquire cigarettes by giving money to someone of age, while an additional 26.7% report borrowing their cigarettes from a friend or peer (Figure 32). Among Kentucky middle school students, 23.7% of students who smoked reported giving money to someone else to purchase their cigarettes, with 22.1% borrowing cigarettes from other smokers (Figure 33).

Figure 32. How Kentucky High School Students Acquire Cigarettes, 2010³

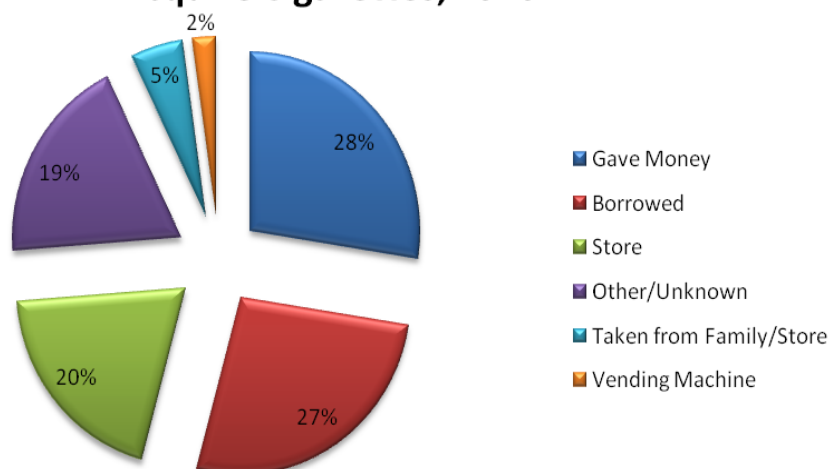
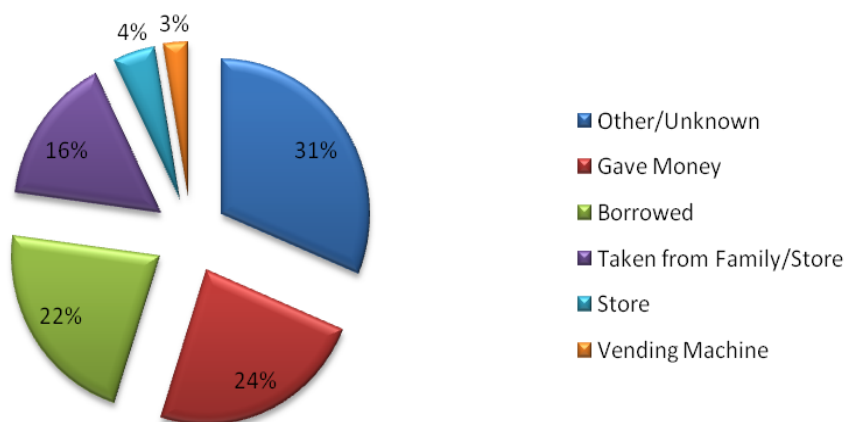


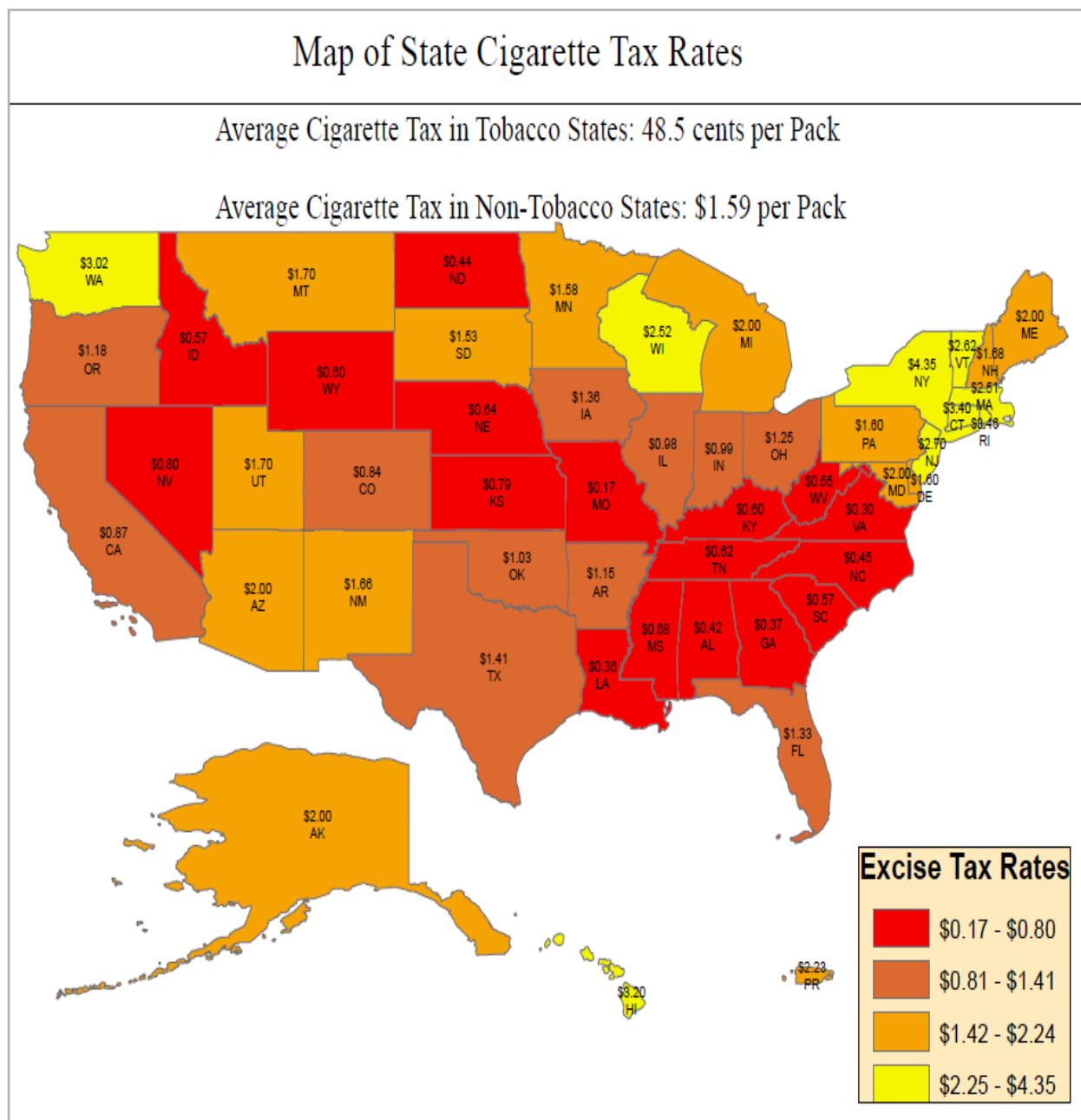
Figure 33. How Kentucky Middle School Students Acquire Cigarettes, 2010³



Tobacco Use in Kentucky 2011

According to the CDC (2011e), for every 10% increase in excise tax, there is a 4.1% decrease in the prevalence of smoking, with the largest effect observed among the youth population. Map 7 compares current excise cigarette tax in Kentucky to the U.S. rates. In 2009, Kentucky's excise tax was increased to the current value of \$0.60 per pack, ranking the state's tax among the lowest in the nation.

Map 7. Cigarette Tax Rates by State, 2011¹²



* Tobacco states are Kentucky, Virginia, North Carolina, South Carolina, Georgia, and Tennessee.

** The current federal excise tax on cigarettes is \$1.01.

Program Goals

The Kentucky Tobacco Prevention and Control Program's mission is to reduce preventable and premature deaths attributed to tobacco use by implementing programs to decrease tobacco use and exposure to secondhand tobacco smoke. This includes local and statewide programs encouraging youth not to use tobacco products and helping those who want to quit in doing so.

These goals are achieved through a community component based in local health departments. This draws on existing infrastructure and strong links between local groups concerned about reducing the health risks and illness associated with tobacco use.

Combining through decades of evidence from across the nation and around the world, the Centers for Disease Control and Prevention has created the following best practices for reducing tobacco use and exposure to secondhand smoke. The Kentucky Tobacco Prevention and Cessation Program uses these recommendations to guide decisions on how to devote limited resources in a way to create maximum impact. These best practices include:

1. Reducing tobacco use initiation through increasing the price of tobacco products through state and federal excise taxes and running mass media campaigns to educate and motivate youth to remain tobacco free.
2. Increasing tobacco cessation by increasing the price of tobacco products, through mass media campaigns, through telephone-based interventions, through mobile-phone interventions, working with health care providers to address patient tobacco use and by reducing client out-of-pocket costs for cessation therapies.
3. Reducing exposure to environmental tobacco smoke through laws and regulations to restrict or ban tobacco use in workplaces and public areas.
4. Restricting minors' access to tobacco products by working with community support to enact interventions.
5. Decreasing tobacco use among workers through smoke-free policies and competitions and incentives to reduce use.

An effective comprehensive tobacco control program will need five programmatic elements in place (CDC 2007). These elements ensure that a program is effective, as well as accountable for progress and how resources are used. The CDC's recommendations include the following components:

1. State and Community Interventions: A range of integrated programs and activities that encourage and support individuals to make behavior choices consistent with tobacco-free norms, including local and statewide policies and programs, chronic disease and tobacco-related disparity elimination initiatives and interventions aimed at influencing youth.
2. Health Communication Interventions: Strategic, culturally-appropriate and high-impact messages that are integrated into the overall state tobacco program effort.
3. Cessation Interventions: Interventions to increase cessation including quitlines and system-based initiatives in the health care system.
4. Surveillance and Evaluation: The process of monitoring tobacco-related attitudes, behavior and health outcomes at regular intervals to determine the extent of need and the impact of tobacco control programs.
5. Administration and Management: The state needs the capacity to implement programs with sustainability, efficacy, and efficiency.

By using best practices, the Kentucky Tobacco Prevention and Cessation Program is able to make judicious use of resources to create significant and long-lasting changes in Kentucky's wellbeing.

Glossary

Alcoholic Beverage Control (ABC) is an office within the Kentucky Environmental and Public Protection Cabinet. The ABC is responsible for issuing alcoholic beverage licenses and enforcing Kentucky statutes and administrative regulations pertaining to the alcoholic beverage industry.

American Cancer Society (ACS) is a nationwide organization whose goal is to eliminate cancer through prevention, advocacy, research, education, and service.

American Heart Association (AHA) is a nationwide organization that seeks to reduce disability and death due to cardiovascular disease and stroke.

Area Development Districts (ADDs) are regions in the state of Kentucky consisting of counties collaborating to provide linkages between local, state, and federal government and private organizations.

Bidis (pronounced “bee-dees”) are hand-rolled cigarettes wrapped in a leaf and tied with a string. They are imported to the United States primarily from India and other Southeast Asian countries. They are small, thin, and can be flavored or unflavored.

Behavioral Risk Factor Surveillance System (BRFSS) is an annual national health survey conducted by the CDC to gather information on behavioral risk factors. The Kentucky BRFSS has been conducted continuously since 1985.

Centers for Disease Control and Prevention (CDC) is a Federal agency charged with protecting the public health and safety of the people of the United States.

Chronic Obstructive Pulmonary Disease (COPD) refers to bronchitis and emphysema, which commonly co-exist. The disease causes the airways to narrow, leading to shortness of breath. It usually worsens over time.

Current smoking among adults is having smoked at least 100 cigarettes and now smoking everyday or some days. Current smoking among youth is defined as smoking cigarettes on one or more of the past 30 days.

General Equivalency Diploma certifies that an individual has high school level academic skills.

Healthy Kentuckians 2010 is a prevention initiative specific to the state and based on the national initiative, Healthy People 2010. Common goals of these initiatives include increasing years of healthy life and eliminating health disparities.

Illegal tobacco sales to minors are sales of any tobacco product by a retail establishment to an underage purchaser.

Inquiry calls include calls to the quit line where the caller wants information about the quit line services without necessarily providing contact information.

Kentucky Adult Tobacco Survey (KYATS) is a telephone survey used the help evaluate the effectiveness of Kentucky Tobacco Prevention and Control Program efforts to reduce smoking and increase the awareness and knowledge of smoking related issues among Kentucky adults. In addition to collecting data on the prevalence of tobacco use among adults, the survey also examines the prevalence of restrictive smoking policies and attitudes toward various tobacco control measures; however, KYATS is not part of a national survey, therefore data cannot be compared between and among states.

Master Settlement Agreement is an agreement between major tobacco companies, 46 states, and 6 U.S. territories that awarded funds to states for the relief of the burden tobacco products have caused through lost productivity and healthcare costs.

Tobacco Use in Kentucky 2011

Nicotine Replacement Therapy (NRT) uses various delivery methods to replace the nicotine supplied by cigarettes or other forms of tobacco. These products are used in smoking cessation efforts to help with withdrawal symptoms and cravings.

Ordinance is a regulation enacted by governing bodies to create smoke-free environments in places of employment, restaurants, bars, and other public places.

Pregnancy Risk Assessment Monitoring System (PRAMS) was established in 1987 by the CDC. The purpose of this population-based surveillance system is to obtain information pertaining to maternal behavior and experiences that may be associated with adverse birth outcomes. The survey is disseminated to women that have recently given birth to live born infants.

Quit attempts among adults is quitting smoking for a day or longer at least once in the past year.

Sudden Infant Death Syndrome (SIDS) is marked by the sudden, unexpected death of an infant that remains unexplained even after autopsy and investigation.

Smoking-Attributable Expenditures (SAE) are estimated health care expenditures attributed to diseases for which cigarette smoking is a primary risk factor.

Smoking-Attributable Mortality (SAM) is the estimated number of deaths caused by disease for which cigarette smoking is a primary risk factor

Smoking-Attributable Mortality, Morbidity, and Economic Costs (SAMMEC) is an application provided by CDC to allow users to estimate the health and health-related economic consequences of smoking to adults and infants. The SAMMEC application has been used to estimate smoking-attributable mortality (SAM), years of potential life lost (YPLL), direct medical expenditures, and productivity losses. Estimates are based on an attributable-fraction methodology that applies current information on cigarette smoking prevalence to scientific data on the relative risk of death from diseases shown to be caused by smoking.

Synar is a federal law, named for the late Congressman Mike Synar, requiring states to restrict and reduce youth access to tobacco products or risk losing block grant funding for alcohol and drug programs.

Youth Tobacco Survey (YTS) provides states with the data needed to design, implement, and evaluate comprehensive tobacco control programs to prevent young people from beginning tobacco use and to help those who have already started using tobacco to quit.

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